Attorney Docket No.: 36968/176363

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: Kevin T. Whitley, *et al.*

U.S. Serial No.: 09/647,028 Examiner: Not yet assigned

International Filing Date: 24 March 1999 Group Art Unit:

For: WIRELESS TELEMETRY METHODS AND SYSTEMS FOR COMMUNICATING WITH OR CONTROLLING INTELLIGENT DEVICES

Box DAC
Assistant Commissioner for Patents
Washington, DC 20231

RENEWED PETITION UNDER 37 CFR 1.47(a)

Sir:

In response to the Decision dated November 21, 2001 in the above-identified application, Applicants hereby submit a renewed request to accept the application for United States national processing without the signature of one of the joint inventors.

Attached hereto are the following documents:

1. Executed Declaration of Karl D. Warfel;

2. Declaration of John M. Briski, which sets out the history of the application and attempts to obtain executed declaration documents and attaches evidence as such as exhibits.

CERTIFICATE OF MAILING (37 CFR 1.8a)

I hereby certify that this correspondence, along with any paper referred to as being attached or enclosed, is being deposited with the United States Postal Service on this 20 day of May 2002 with sufficient postage as first-class mail in an envelope addressed to Box DAC, Commissioner for Patents, Washington, D.C. 20231.

Odessa S. Roberts

Our check in the amount of $1570 ($1440 – 3 month extension of time, and $130 petition fee) is enclosed with this submission. Applicants believe that no further fees are due at this time. If, however, this believe is incorrect, please charge any additional fees due, or credit any overpayments to Deposit Account No. 11-0855.

Respectfully submitted,

John M. Briski
Reg. No. 44,562

Date: May 20, 2002

KILPATRICK STOCKTON LLP
1100 Peachtree Street, Suite 2800
Atlanta, GA 30309
404/815-6500

06/03/2002 SNAJARRO 00000114 09647028
01 FC:118 1440.00 OP
06/03/2002 SNAJARRO 00000114 09647028
02 FC:122 130.00 OP

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: Kevin T. Whitley, Karl B. Warfel, and Arthur M. Shand

Serial No.: 09/647,028 Examiner:

Int. Application No.: PCT/US99/06429

Int. Filing Date: March 24, 1999 Group Art Unit:

Priority Date: March 24, 1998

For: WIRELESS TELEMETRY METHODS AND SYSTEMS FOR COMMUNICATING WITH OR CONTROLLING INTELLIGENT DEVICES

DECLARATION OF JOHN M. BRISKI

My name is John M. Briski and my principal residence is at 170 Clipper Bay Drive, Alpharetta, Georgia 30005. I am an attorney in the Atlanta, Georgia office of the law firm of Kilpatrick Stockton, LLP, Suite 2800, 1100 Peachtree Street, NW, Atlanta, Georgia 30309 ("Kilpatrick"). Kilpatrick has been appointed as an agent for prosecuting the above referenced patent application through its representation of the assignee of this application, and through a combined Delcaration and Power of Attorney executed by the inventor, Arthur M. Shand, who assigned the application to the assignee.

Based on my review of and work with the relevant files, a provisional patent application entitled "Wireless Telemetry Methods and Systems for Communicating With or Controlling Intelligent Devices" was filed by Kilpatrick on March 24, 1998 with the United States Patent and Trademark Office ("PTO"). The inventors named in the application were Kevin T. Whitley, Karl B. Warfel, and Arthur M. Shand. This provisional patent application was assigned U.S. Serial No. 09/647,028. Each inventor duly executed a valid assignment transferring all rights to the "Wireless Telemetry Methods and Systems for Communicating With or Controlling Intelligent Devices" invention to the BellSouth Intellectual Property Corporation.

On March 24, 1999, Kilpatrick filed an international patent application that claimed priority to the earlier filed U.S. Provisional Patent Application. The international application was assigned International Application No. PCT/US99/06429. A Demand for International Preliminary Examination was filed on September 21, 1999, prior to the expiration of nineteen months from the priority date. The thirty-month period for paying the basic national filing fee in the United States expired on September 25, 2000 (September 24, 2000 fell on a Sunday).

On September 25, 2000, Kilpatrick filed the national stage papers in the United States, which was accompanied by the basic national filing fee as required by 35 U.S.C. 371(c)(1) and the declaration, which was executed only by one of the three inventors. In addition to the national stage papers, Kilpatrick also filed a Statement Regarding Lack of Signature Of Applicant/Inventor Under PCT 4.15(b). This patent application was subsequently assigned U.S. Serial No. 09/647,028

On March 8, 2001, the United States Designated/Elected Office (DO/EO/US) mailed a Notification of Missing Requirements Under 35 U.S.C. 371 along with a Notification of Defective Oath or Declaration, indicating that a properly executed oath or declaration must be filed in accordance to 37 C.F.R. 1.497 along with a surcharge under 37 C.F.R. 1.492(e).

Based on my review of the relevant files, I noted that efforts had been made at least as early as May 5, 1999 to the January 25, 2002 to present the PCT Power of Attorney and Assignment to Karl Warfel and Kevin Whitley for their review and signature. In particular, I attach copies of documents from the files that demonstrate these efforts as follows:

- Memorandum of May 5, 1999 to Karl Warfel and Kevin Whitley, attached as Exhibit 1.
- A listing of the last known address of Karl Warfel and Kevin Whitley, attached as exhibit 2.
- Letter of December 18, 2001 to Karl Warfel, copy of returned Certified Mail Label addressed to Grayson, Georgia, attached as Exhibit 3.
- Letter of December 19, 2001 to Thomas Whitley, copy of returned Certified Mail Label addressed to Acworth, Georgia, attached as Exhibit 4.
- Letter of January 25, 2002 to Karl Warfel, copy of returned Certified Mail Label addressed to Bellevue, Washington, attached as Exhibit 5.
- Letter of April 2, 2002, signed and dated by Karl Warfel and a copy of the returned Declaration and Power of Attorney, signed, but not dated, by Mr. Karl Warfel, attached as Exhibit 6.
- Return receipt of facsimile transmission forwarding Declaration and Power of Attorney to Mr. Karl Warfel, dated May 2, 2002, attached as Exhibit 7.

- Copies of documents originally submitted September 25, 2000, attached as Exhibit 8.

In our file, we had Karl Warfel's address as 1296 Pinehurst Road, **Grayson, Georgia** 30017. Kilpatrick mailed a packet, which contained a copy of the application, as filed, along with a Declaration and Assignment to the Grayson address. The packet was returned to Kilpatrick on January 4, 2002, by the United States Post Office, as shown by the returned envelope under Exhibit 3. To insure that we had Mr. Warfel's correct address, we contacted Ms. Nancy Woodard, the Patent Program Manager of BellSouth Intellectual Property Management Company. Ms. Woodard informed us that the last known address that BellSouth Corporation had on file for Mr. Warfel was 12819 SE 38th Street, Suite 261 **Bellevue, Washington** 98006. Kilpatrick sent a subsequent package on January 25, 2002, containing a copy of the filed application, a declaration, and an assignment for Mr. Warfel to execute to the Bellevue address. The package was returned to Kilpatrick by the United States Patent Office, as shown by the returned envelope under Exhibit 4. Finally, on April 2, 2002, Mr. Warfel was located living in 18328 Se Covington, Sawyer Rd., **Kent, Washington** 98042. I contacted Mr. Warfel, who subsequently agreed to sign the Declaration and Power of Attorney for the above reference patent application. Mr. Warfel signed and dated the cover letter that accompanied the Declaration and Power of Attorney. However, Mr. Warfel did not date the Declaration and Power of Attorney. A copy of the signed Declaration and Power of Attorney and the signed and dated cover letter are shown by Exhibit 6.

Mr. Warfel was subsequently contacted on May 2, 2002, by telephone and agreed to date the Declaration and Power of Attorney. The Declaration and Power of Attorney were forwarded to Mr. Warfel via facsimile transmission on May 2, 2002. A copy of the return receipt for the facsimile transmission is shown by Exhibit 7. When we did not receive the properly executed Declaration and Power of Attorney by May 7, 2002, I attempted to contact Mr. Warfel. I called Mr. Warfel's office on May 7, 2002 (telephone number 425.444.0045) and left a message on his answering service asking him to contact me. Mr. Warfel did not return my phone call. I attempted to contact Mr. Warfel on May 9, 2002, and left another message on his answering service asking him again to please contact me. Finally, I attempted to contact Mr. Warfel on a daily basis between May 13, 2002 and May 20, 2002 and again left a message on his answering service each day. To date, Mr. Warfel has not returned any of these phone calls, nor has Mr. Warfel returned the Declaration and Power of Attorney properly executed.

In our file, we had Kevin Whitley's address as 5030 Oak Hollow, **Acworth, Georgia 30058**. The address was confirmed with Nancy Woodard, the Patent Program Manager of BellSouth Intellectual Property Management Company. A package containing a copy of the filed application along with a Declaration and Assignment were sent to the Acworth address was returned to Kilpatrick by the

United States Post Office, as shown by the returned envelope under Exhibit 4. There was no forwarding address for Mr. Whitley.

To this date, I have not received nor heard from Kevin Whitley in response to our correspondence. On information and belief, Kilpatrick has not received an executed Declaration or any other communication relating to this matter from Kevin Whitley.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code, and that such willful false statement may jeopardize the validity of the application or any patent issuing thereon.

Dated: 5.20.02

John M. Briski

Exhibit 1

BellSouth Intellectual Property
Management Corporation
Suite 500
1155 Peachtree Street, N.E.
Atlanta, Georgia 30309-3610
arena.christopher@bsc.bellsouth.net

Christopher M. Arena
General Attorney

404 249-2612
Fax 404 249-2821

MEMORANDUM

TO: Karl Warfel
Kevin Whitley

FROM: Christopher M. Arena CMA/JT

DATE: May 5, 1999

RE: Execution of PCT Powers of Attorney and Assignment
Claiming Priority to U.S. Provisional Application No. 60/079,215
Title of Invention: Wireless Telemetry Methods and Systems for Communicating with or Controlling Intelligent Devices
KS File No.: 36968/~~176363~~
BellSouth File No.: 98018WP
Action: Please execute the PCT Powers of Attorney/Assignment and return to us no later than May 17, 1999

On March 24, 1999, we filed a PCT application, designating all eligible PCT countries, including the designation of the U.S. as a continuation-in-part application. The international application was filed without all the executed documents.

Please find enclosed a PCT Powers of Attorney and Assignment for your execution. Each inventor has been given the same material. Please execute both forms, ensuring that the Assignment is executed in the presence of a notary.

We appreciate your assistance in this request.

Enclosure

CMA/jt

(2)

Kevin Thomas Whitley

Home Address	5030 Oak Hollow Drive Acworth, Georgia 30102
Citizenship:	USA

KILPATRICK
STOCKTON LLP
Attorneys at Law

Suite 2800 1100 Peachtree St.
Atlanta GA 30309-4530
t 404 815 6500 f 404 815 6555
www.KilpatrickStockton.com

(3)

December 18, 2001

direct dial 404 685 6761
KStark@KilpatrickStockton.com

VIA CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Karl Bernard Warfel
1296 Pinehurst Road
Greyson, Georgia 30017

Re: United States Patent Application No. 09/434,072
Wireless Telemetry Methods and Systems for Communicating With or Controlling Intelligent Devices
Inventors: Kevin Whitley, Karl Warfel, Arthur Shand
BellSouth Ref: 98018
Our Ref: 36968/176363

Action Requested: **Review, and if appropriate, execution of the enclosed formal papers, or in the alternative, a response regarding the non-execution of the formal papers by January 15, 2002.**

Dear Mr. Warfel:

We request your further assistance with the prosecution of the above-identified patent application. In sum, we seek your review, and if appropriate, execution of the formal papers associated with this application. We have provided mailing materials for return of the information to us. Details are provided below.

Discussion

The above-identified patent application entered into the national phase of prosecution with the United States Patent and Trademark Office (USPTO) on September 25, 2000. A copy of the application and preliminary amendmentis enclosed for your reference. We need your assistance in review and execution, if appropriate, of the formal papers associated with this application.

Combined Declaration for Patent Application and Power of Attorney

To complete the requirements for this application, a *Combined Declaration for Patent Application and Power of Attorney* (DEC/POA) needs to be submitted to the USPTO. The DEC/POA is a document to be executed by the inventors. We have enclosed a DEC/POA for your review, and if appropriate, execution.

The DEC/POA contains several statements to be confirmed by your signature of the document. Among those statements, the DEC/POA includes the following:

- "I believe I am an original, first and joint inventor of the subject matter...."
- "I ... have reviewed and understand the contents of the ... specification [application]...."
- "I acknowledge the duty to disclosure information which is material to the patentability of this application [to the USPTO]...."
- "I ...appoint [certain attorneys of Kilpatrick Stockton LLP] ... to prosecute this application ... [in the USPTO]."
- "I acknowledge the ... attorneys ... [of Kilpatrick Stockton LLP] to represent my employer ...or the entity with which I have contracted...."

By executing the DEC/POA, you are declaring all of the statements in it to be true. If you have any questions regarding the statements in the DEC/POA, you are invited to contact the undersigned, and a response to your question will be obtained from the appropriate source.

Return of the Materials

We would appreciate return of the executed DEC/POA at your early convenience. Please respond by returning the signed DEC/POA to us in the enclosed pre-addressed United States Express Mail envelope by **January 15, 2002.**

Refusal to Sign the DEC/POA

It may be that you refuse to sign the DEC/POA. We would appreciate an indication of such refusal, and if appropriate, an explanation of the refusal. You may provide the

indication and an explanation on the attached form and return them to us in the mailing materials.

Conclusion

Thank you for your assistance in reviewing this letter and the enclosed materials. We hope to receive the executed DEC/POA (or an indication and an explanation of a refusal to make the execution) at your early convenience. If you should have any questions, please do not hesitate to call.

Very truly yours,

Karen D. Stark, Paralegal

KDS/
Enclosures

cc w/o encls.: Ms. Nancy F. Woodard
John M. Briski, Esq.
Odessa Roberts, Paralegal

Re: United States Patent Application No. 09/434,072
Wireless Telemetry Methods and Systems for Communicating With or Controlling Intelligent Devices
Inventors: Kevin Whitley, Karl Warfel, Arthur Shand
BellSouth Ref: 98018
Our Ref: 36968/176363

☐ The executed DEC/POA are enclosed.

☐ I refuse to sign the DEC/POA.

☐ I refuse to sign the DEC/POA because:

_____
_____
_____
_____

_____ _____
Date Karl Bernard Warfel

DECLARATION FOR PATENT APPLICATION

☒ Original ☐ Supplemental ☐ Substitute ☐ PCT

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name.

I believe I am an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

Wireless Telemetry Methods and Systems for Communicating with or Controlling Intelligent Devices
(Title of the Invention)

the specification of which (check one)

☐ is attached hereto

☒ was filed on 3/24/1999 as U. S. Application Serial Number or PCT International Application Number PCT/US99/06429

and was amended by a Preliminary Amendment filed on September 25, 2000 along with transmittal of an application in the United States under 35 U.S.C.371

(if applicable)

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the patentability of this application in accordance with Title 37, Code of Federal Regulations, § 1.56(a).

I hereby claim foreign priority benefits under Title 35, United States Code, § 119 (a) - (d) or § 365(b) of any foreign application(s) for patent or inventor's certificate, or § 365(a) of any PCT international application which designated at least one country other than the United States of America, listed below and have also identified, by checking the box below , any foreign application for patent or inventor's certificate, or of any PCT international application having a filing date before that of the application on which priority is claimed.

Prior Foreign Applications			Priority Claimed		Copy Attached	
Application Number	Country	Foreign Filing Date (MM/DD/YYYY)	YES	NO	YES	NO

I hereby claim the benefit under Title 35, United States Code § 119(e) of any United States provisional application(s) listed below and claim the benefit under Title 35, United States Code, § 120 of any United States application(s), or § 365(c) of any PCT international application(s) designating the United States of America, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT International application(s) in the manner provided by the first paragraph of Title 35, United States Code, § 112, I acknowledge the duty to disclose information which is material to

patentability as defined in Title 37, Code of Federal Regulations, § 1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application:

Parent Application Number	Filing Date	Status (Mark Appropriate Column Below)		
		Patented	Pending	Abandoned
60/079,215	March 24, 1998			X

As a named inventor, I hereby revoke all prior powers and appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith:

FIRM NAME: **KILPATRICK STOCKTON LLP**, 1100 Peachtree Street, Suite 2800, Atlanta, Georgia 30309-4530

Customer No. 30314

Attorney and/or Agent	Registration No.
Roger T. Frost	22,176
Charles Y. Lackey	22,707
Anthony B. Askew	24,154
John M. Harrington	25,592
Donald R. Andersen	28,280
Robert E. Richards	29,105
John S. Pratt	29,476
A. Jose Cortina	29,733
James L. Ewing, IV	30,630
Stephen M. Schaetzel	31,418
James Dean Johnson	31,771
Charles W. Calkins	31,814
Larry A. Roberts	31,871
Jamie L. Greene	32,467
George T. Marcou	33,014
Dean W. Russell	33,452
Richard T. Peterson	35,320
Charles T. Simmons	35,359
Tracy W. Druce	35,493
Eleanor M. Musick	35,623
Nora M. Tocups	35,717
Bruce D. Gray	35,799
Theodore R. Harper	35,890
Geoff L. Sutcliffe	36,348
Pat Winston Kennedy	36,970
David P. Lecroy	37,869
Suzanne Seavello Shope	37,933
Mitchell G. Stockwell	39,389
Jeffery B. Arnold	39,540
Suil Kang	39,723
Mary Anthony Merchant	39,771
Brenda Ozaki Holmes	40,339
Lisa J. Moyles	40,737
Michael J. Turton	40,852

Attorney and/or Agent	Registration No.
Alana G. Kriegsman	41,747
J. Steven Gardner	41,772
Theodore M. Green	41,801
Joni Stutman	42,173
Heather D. Carmichael	42,389
Thomas A. Corrado	42,439
John K. McDonald	42,860
Sima Singadia Kulkarni	43,732
Camilla Camp Williams	43,992
Christopher J. Chan	44,070
Li K. Wang	44,393
John William Ball, Jr.	44,433
Dawn-Marie Bey	44,442
Tiep H. Nguyen	44,465
John M. Briski	44,562
Michael J. Dimino	44,657
Kristin L. Johnson	44,807
Paul E. Knowlton	44,842
J. Jason Link	44,874
Cheryl L. Huseman	45,392
Shelby B. Grier	45,785
Jennifer R. Seng	45,851
Vaibhav P. Kadaba	45,865
Greg Moldafsky	46,514
J. Michael Boggs	46,563
Michael K. Dixon	46,665
Tywanda L. Harris	46,758
Kristin D. Mallatt	46,895
Cynthia B. Rothschild	47,040
John C. Alemanni	47,384
Geoffrey K. Gavin	47,591
Janina Malone	47,768
Robert M. Stevens	47,972
Christopher L. Bernard	P48,234

Attorney and/or Agent	Registration No.
Yoncha L. Kundupoglu	41,130
Scott Zimmerman	41,390

Attorney and/or Agent	Registration No.
Laura M. Kelley	P48,441
Michael A. Bush	P48,893

I acknowledge the above-listed attorneys and agents and their firm Kilpatrick Stockton LLP represent my employer (if I am an employee and this application has been or will be assigned to my employer) or the entity with which I have contracted (if I am an independent contractor and this application has been or will be assigned to such entity) and in such cases do not represent me individually. I further acknowledge I have not established, nor will I seek to establish, any personal attorney/client relationship with Kilpatrick Stockton LLP in connection with this application and understand that, should I require legal representation, I will obtain such, at my expense, other than through Kilpatrick Stockton LLP.

Send Correspondence to: John S. Pratt, Esq.
Kilpatrick Stockton LLP
1100 Peachtree Street, Suite 2800
Atlanta, Georgia 30309-4530

Customer No. 30314

Direct telephone calls to: John M. Briski (404) 532-6908

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Full name of sole or first inventor Kevin T. Whitley

Inventor's signature _____ Date _____

Residence 5030 Oak Hollow Drive, Acworth, GA 30102

Citizenship U.S.A.

Post Office Address Same

Full name of second inventor Karl B. Warfel

Inventor's signature _____ Date _____

Residence 1296 Pinehurst Road, Greyson, GA 30017

Citizenship U.S.A.

Post Office Address Same

Full name of third inventor Arthur M. Shand

Inventor's signature _____ Date _____

Residence 10881 Big Canoe, Big Canoe, GA 30143

Citizenship U.S.A.

Post Office Address Same

CERTIFIED MAIL

7000 1670 0009 4876 5756

ATLANTA
12-19-01
GA

U.S. POSTAGE
$5.55
METER 9502188
neopost

FIRST CLASS MAIL

UAA
L.D.
To:

KILPATRICK STOCKTON LLP

MR. KARL BERNARD WARFEL

Not Deliverable As Addressed
Unable To Forward
Insufficient Address
Moved, Left No Address
Unclaimed
Refused
Attempted - Not Known
No Such Street
Number
Illegible
No Mail Receptacle
Box Closed - No Order
Returned For Better Address
Postage Due

Suite 2800 1100 Peachtree St.
Atlanta GA 30309

UNITED STATES POSTAL SERVICE

First-Class Mail
Postage & Fees Paid
USPS
Permit No. G-10

John M. Briski, Esq.
Kilpatrick Stockton LLP
Suite 2800
1100 Peachtree Street
Atlanta, GA 30309

Not Deliverable As Addressed
Unable To Forward
Insufficient Address
Moved, Left No Address
Unclaimed
Refused
Attempted - Not Known
No Such Street
No Such Number
Vacant
No Mail Receptacle
Box Closed - No Order
Forwarding Order Expired

jbriski 36908/176369

RETURN TO SENDER

KILPATRICK
STOCKTON LLP
Attorneys at Law

Suite 2800 1100 Peachtree St.
Atlanta GA 30309-4530
t 404 815 6500 f 404 815 6555
www.KilpatrickStockton.com

(4)

December 19, 2001

direct dial 404 685 6761
KStark@KilpatrickStockton.com

VIA CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Kevin Thomas Whitley
5030 Oak Hollow Drive
Acworth, Georgia 30102

Re: United States Patent Application No. 09/434,072
Wireless Telemetry Methods and Systems for Communicating With or Controlling Intelligent Devices
Inventors: Kevin Whitley, Karl Warfel, Arthur Shand
BellSouth Ref: 98018
Our Ref: 36968/176363

Action Requested: Review, and if appropriate, execution of the enclosed formal papers, or in the alternative, a response regarding the non-execution of the formal papers by January 15, 2002.

Dear Mr. Whitley:

We request your further assistance with the prosecution of the above-identified patent application. In sum, we seek your review, and if appropriate, execution of the formal papers associated with this application. We have provided mailing materials for return of the information to us. Details are provided below.

Discussion

The above-identified patent application entered into the national phase of prosecution with the United States Patent and Trademark Office (USPTO) on September 25, 2000. A copy of the application and preliminary amendment is enclosed for your reference. We need your assistance in review and execution, if appropriate, of the formal papers associated with this application.

Combined Declaration for Patent Application and Power of Attorney

To complete the requirements for this application, a *Combined Declaration for Patent Application and Power of Attorney* (DEC/POA) needs to be submitted to the USPTO. The DEC/POA is a document to be executed by the inventors. We have enclosed a DEC/POA for your review, and if appropriate, execution.

The DEC/POA contains several statements to be confirmed by your signature of the document. Among those statements, the DEC/POA includes the following:

- "I believe I am an original, first and joint inventor of the subject matter...."
- "I ... have reviewed and understand the contents of the ... specification [application]...."
- "I acknowledge the duty to disclosure information which is material to the patentability of this application [to the USPTO]...."
- "I ...appoint [certain attorneys of Kilpatrick Stockton LLP] ... to prosecute this application ... [in the USPTO]."
- "I acknowledge the ... attorneys ... [of Kilpatrick Stockton LLP] to represent my employer ...or the entity with which I have contracted...."

By executing the DEC/POA, you are declaring all of the statements in it to be true. If you have any questions regarding the statements in the DEC/POA, you are invited to contact the undersigned, and a response to your question will be obtained from the appropriate source.

Return of the Materials

We would appreciate return of the executed DEC/POA at your early convenience. Please respond by returning the signed DEC/POA to us in the enclosed pre-addressed United States Express Mail envelope by **January 15, 2002.**

Refusal to Sign the DEC/POA

It may be that you refuse to sign the DEC/POA. We would appreciate an indication of such refusal, and if appropriate, an explanation of the refusal. You may provide the

indication and an explanation on the attached form and return them to us in the mailing materials.

Conclusion

Thank you for your assistance in reviewing this letter and the enclosed materials. We hope to receive the executed DEC/POA (or an indication and an explanation of a refusal to make the execution) at your early convenience. If you should have any questions, please do not hesitate to call.

Very truly yours,

Karen D. Stark, Paralegal

KDS/
Enclosures

cc w/o encls.: Ms. Nancy F. Woodard
John M. Briski, Esq.
Odessa Roberts, Paralegal

Re: United States Patent Application No. 09/434,072
Wireless Telemetry Methods and Systems for Communicating With or Controlling Intelligent Devices
Inventors: Kevin Whitley, Karl Warfel, Arthur Shand
BellSouth Ref: 98018
Our Ref: 36968/176363

☐ The executed DEC/POA are enclosed.

☐ I refuse to sign the DEC/POA.

☐ I refuse to sign the DEC/POA because:

_____
_____
_____
_____

_____ _____
Date Kevin Thomas Whitley

DECLARATION FOR PATENT APPLICATION

☒ Original ☐ Supplemental ☐ Substitute ☐ PCT

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name.

I believe I am an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

Wireless Telemetry Methods and Systems for Communicating with or Controlling Intelligent Devices
(Title of the Invention)

the specification of which (check one)

☐ is attached hereto

☒ was filed on 3/24/1999 as U. S. Application Serial Number or PCT International Application Number PCT/US99/06429

and was amended by a Preliminary Amendment filed on September 25, 2000 along with transmittal of an application in the United States under 35 U.S.C.371

(if applicable)

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the patentability of this application in accordance with Title 37, Code of Federal Regulations, § 1.56(a).

I hereby claim foreign priority benefits under Title 35, United States Code, § 119 (a) - (d) or § 365(b) of any foreign application(s) for patent or inventor's certificate, or § 365(a) of any PCT international application which designated at least one country other than the United States of America, listed below and have also identified, by checking the box below , any foreign application for patent or inventor's certificate, or of any PCT international application having a filing date before that of the application on which priority is claimed.

Prior Foreign Applications			Priority Claimed		Copy Attached	
Application Number	Country	Foreign Filing Date (MM/DD/YYYY)	YES	NO	YES	NO

I hereby claim the benefit under Title 35, United States Code § 119(e) of any United States provisional application(s) listed below and claim the benefit under Title 35, United States Code, § 120 of any United States application(s), or § 365(c) of any PCT international application(s) designating the United States of America, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT International application(s) in the manner provided by the first paragraph of Title 35, United States Code, § 112, I acknowledge the duty to disclose information which is material to

patentability as defined in Title 37, Code of Federal Regulations, § 1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application:

Parent Application Number	Filing Date	Status (Mark Appropriate Column Below)		
		Patented	Pending	Abandoned
60/079,215	March 24, 1998			X

As a named inventor, I hereby revoke all prior powers and appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith:

FIRM NAME: **KILPATRICK STOCKTON LLP,** 1100 Peachtree Street, Suite 2800, Atlanta, Georgia 30309-4530

Customer No. 30314

Attorney and/or Agent	Registration No.
Roger T. Frost	22,176
Charles Y. Lackey	22,707
Anthony B. Askew	24,154
John M. Harrington	25,592
Donald R. Andersen	28,280
Robert E. Richards	29,105
John S. Pratt	29,476
A. Jose Cortina	29,733
James L. Ewing, IV	30,630
Stephen M. Schaetzel	31,418
James Dean Johnson	31,771
Charles W. Calkins	31,814
Larry A. Roberts	31,871
Jamie L. Greene	32,467
George T. Marcou	33,014
Dean W. Russell	33,452
Richard T. Peterson	35,320
Charles T. Simmons	35,359
Tracy W. Druce	35,493
Eleanor M. Musick	35,623
Nora M. Tocups	35,717
Bruce D. Gray	35,799
Theodore R. Harper	35,890
Geoff L. Sutcliffe	36,348
Pat Winston Kennedy	36,970
David P. Lecroy	37,869
Suzanne Seavello Shope	37,933
Mitchell G. Stockwell	39,389
Jeffery B. Arnold	39,540
Suil Kang	39,723
Mary Anthony Merchant	39,771
Brenda Ozaki Holmes	40,339
Lisa J. Moyles	40,737
Michael J. Turton	40,852

Attorney and/or Agent	Registration No.
Alana G. Kriegsman	41,747
J. Steven Gardner	41,772
Theodore M. Green	41,801
Joni Stutman	42,173
Heather D. Carmichael	42,389
Thomas A. Corrado	42,439
John K. McDonald	42,860
Sima Singadia Kulkarni	43,732
Camilla Camp Williams	43,992
Christopher J. Chan	44,070
Li K. Wang	44,393
John William Ball, Jr.	44,433
Dawn-Marie Bey	44,442
Tiep H. Nguyen	44,465
John M. Briski	44,562
Michael J. Dimino	44,657
Kristin L. Johnson	44,807
Paul E. Knowlton	44,842
J. Jason Link	44,874
Cheryl L. Huseman	45,392
Shelby B. Grier	45,785
Jennifer R. Seng	45,851
Vaibhav P. Kadaba	45,865
Greg Moldafsky	46,514
J. Michael Boggs	46,563
Michael K. Dixon	46,665
Tywanda L. Harris	46,758
Kristin D. Mallatt	46,895
Cynthia B. Rothschild	47,040
John C. Alemanni	47,384
Geoffrey K. Gavin	47,591
Janina Malone	47,768
Robert M. Stevens	47,972
Christopher L. Bernard	P48,234

Attorney and/or Agent	Registration No.
Yoncha L. Kundupoglu	41,130
Scott Zimmerman	41,390

Attorney and/or Agent	Registration No.
Laura M. Kelley	P48,441
Michael A. Bush	P48,893

I acknowledge the above-listed attorneys and agents and their firm Kilpatrick Stockton LLP represent my employer (if I am an employee and this application has been or will be assigned to my employer) or the entity with which I have contracted (if I am an independent contractor and this application has been or will be assigned to such entity) and in such cases do not represent me individually. I further acknowledge I have not established, nor will I seek to establish, any personal attorney/client relationship with Kilpatrick Stockton LLP in connection with this application and understand that, should I require legal representation, I will obtain such, at my expense, other than through Kilpatrick Stockton LLP.

Send Correspondence to: John S. Pratt, Esq.
Kilpatrick Stockton LLP
1100 Peachtree Street, Suite 2800
Atlanta, Georgia 30309-4530

Customer No. 30314

Direct telephone calls to: John M. Briski (404) 532-6908

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Full name of sole or first inventor Kevin T. Whitley

Inventor's signature _____ Date _____

Residence 5030 Oak Hollow Drive, Acworth, GA 30102

Citizenship U.S.A.

Post Office Address Same

Full name of second inventor Karl B. Warfel

Inventor's signature _____ Date _____

Residence 1296 Pinehurst Road, Greyson, GA 30017

Citizenship U.S.A.

Post Office Address Same

Full name of third inventor Arthur M. Shand

Inventor's signature _____ Date _____

Residence 10881 Big Canoe, Big Canoe, GA 30143

Citizenship U.S.A.

Post Office Address Same

IN THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US)

Applicant: WHITLEY, Kevin T., *et al.*

International Application No.:	PCT/US99/06429	Express Mail Label No.:	EL602995709US
International Filing Date:	March 24, 1999	Date of Deposit:	September 25, 2000

Title: WIRELESS TELEMETRY AND SYSTEMS FOR COMMUNICATING WITH OR CONTROLLLING INTELLIGENT DEVICES

Box PCT
Assistant Commissioner for Patents
Washington, D.C. 20231

PRELIMINARY AMENDMENT

Dear Sir:

Please preliminarily amend the national phase entry of the above-identified application as follows:

In the Claims

Please delete claims 1-19 and add the following new claims:

--20. A method for remotely monitoring or controlling activities within multiple facilities geographically dispersed within at least one wireless network adapted to transmit GSM short messages to allow the facilities to communicate with other terminals without making a wireless telephone call, the method comprising:

(a) providing the selected facility with a gateway comprising a processor, a transceiver and a SIM card adapted to transmit short messaging service messages;

(b) periodically causing the gateway to formulate a short message reporting on activities within the selected facility at which the gateway is located;

(c) transmitting the message over the GSM network via a Short Messaging Center coupled to a Mobile Switching Center within the GSM network; and

(d) receiving the message at a terminal selected from a group of devices consisting of a mobile station, a workstation and a central processor.

21. A method according to claim 20 further comprising the step of controlling devices located at a selected facility by formulating a control message and forwarding it via the GSM network to the selected facility, wherein the gateway at the facility processes the control message in order to control one or more devices coupled to the gateway.

22. A method according to claim 20 further comprising the step of collecting multiple messages from the selected facility, storing those messages in a database associated with a central processor and processing the stored messages at the central processor to display information concerning activities at the selected facility.

23. A method according to claim 21 further comprising the step of collecting multiple messages from the selected facility, storing those messages in a database associated with a central processor and processing the stored messages at the central processor to display information concerning activities at the selected facility.

24. A method according to claim 21 in which the control message is formulated by a user on a communication device selected from the group consisting of a pager, a cellular handset, an internet wireless communicator or a workstation.

25. A method according to claim 24 further comprising the step of coupling the central processor to an internet protocol network to allow users to view the displayed information concerning activities at the selected facility.

26. A method according to claim 20 further comprising the step of monitoring energy uses within the selected facility by periodically polling at least one device therein.

27. A method according to claim 21 further comprising the step of monitoring energy uses within the selected facility by periodically polling at least one device therein.

28. A method according to claim 22 further comprising the step of monitoring energy uses within the selected facility by periodically polling at least one device therein.

29. A method according to claim 23 further comprising the step of monitoring energy uses within the selected facility by periodically polling at least one device therein.

30. A method according to claim 24 further comprising the step of monitoring energy uses within the selected facility by periodically polling at least one device therein.

31. A method according to claim 25 further comprising the step of monitoring energy uses within the selected facility by periodically polling at least one device therein.

32. A method according to claim 26 further comprising the step of aggregating the periodic polls and uploading the aggregated information to a user's terminal.

33. A system for transmitting data to and from multiple gateways deployed in homes or businesses and capable of collecting data concerning usage or operation of various devices located in the homes or businesses, the system comprising:

a) multiple gateways, each adapted to formulate or accept a wireless packet data transmission;

b) a base station controller adapted to route data forwarded to the base station controller via wireless transmission to a support node for formatting the message into a format selected from the group consisting of internet protocol, X.25 protocol and a data protocol for transmission over public land or mobile networks; and

c) a terminal for receiving the formatted messages.

34. A system according to claim 33 wherein the terminal is a central processor that collates the formatted messages to describe the conditions within the facility associated with a selected one of the multiple gateways.

35. A system according to claim 34 further comprising a workstation for accessing the formatted messages collated by the central processor.

36. A system according to claim 35 wherein the workstation allows entry of commands to be delivered via the support node to one or groups of the multiple gateways.

37. A system according to claim 33 further comprising a mobile station or a fixed terminal from which a user may formulate and send a message directly to one or groups of the multiple gateways.

38. A method for using a wireless network to deliver messages from or to each of multiple gateways that are deployed in geographically-dispersed facilities comprising:

a) formulating a message for wireless transmission according to an SMS or GPRS format;

b) transmitting the message to a network element for identifying that message; and

c) transferring the message from the network element to a central processor for collating the transferred messages with other messages or data related to a selected gateway.

39. A method according to claim 38 in which the network element is a Short Messaging Service Center ("SMSC").

40. A method according to claim 39 further comprising the step of communicating to the selected gateway by formulating a message and delivering it to the SMSC and causing the SMSC to forward the message to the selected gateway.

41. A method according to claim 38 in which the network element is a base station controller that determines that the message is a GPRS data transmission and routes the message to a second network element comprising a support node.

42. A method according to claim 41 further comprising the step of communicating to the selected gateway by formulating a message and delivering it to the support node and causing the support node to forward the message to the selected gateway.

43. A method according to claim 38 in which the transmitting step comprises the step of coupling the network element to an Internet Protocol network for forwarding the message to the central processor.

44. A method according to claim 39 in which the transmitting step comprises the step of coupling the network element to an Internet Protocol network for forwarding the message to the central processor.

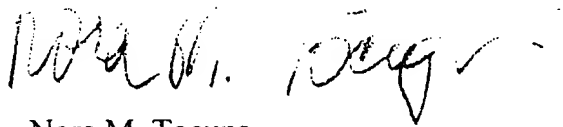
45. A method according to claim 40 in which the transmitting step comprises the step of coupling the network element to an Internet Protocol network for forwarding the message to the central processor.

46. A method according to claim 41 in which the transmitting step comprises the step of coupling the network element to an Internet Protocol network for forwarding the message to the central processor.

47. A method according to claim 42 in which the transmitting step comprises the step of coupling the network element to an Internet Protocol network for forwarding the message to the central processor.

48. A method according to claim 38 in which the formulating step occurs when a user formulates the message from a mobile station. --

Respectfully submitted,



Nora M. Tocups
Reg. No. 35,717

Date: September 25, 2000
KILPATRICK STOCKTON LLP
1100 Peachtree Street, Suite 2800
Atlanta, Georgia 30309-4530
(404) 815-6500

PCT

WORLD INTELLECTUAL PROPERTY ORGANIZATION
International Bureau

INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 6 :
H04Q 7/22, G08C 17/02, H04M 11/00

A1

(11) International Publication Number: WO 99/49680

(43) International Publication Date: 30 September 1999 (30.09.99)

(21) International Application Number: PCT/US99/06429

(22) International Filing Date: 24 March 1999 (24.03.99)

(30) Priority Data:
60/079,215 24 March 1998 (24.03.98) US

(63) Related by Continuation (CON) or Continuation-in-Part (CIP) to Earlier Application
US 60/079,215 (CIP)
Filed on 24 March 1998 (24.03.98)

(71) Applicant *(for all designated States except US)*: BELLSOUTH INTELLECTUAL PROPERTY CORPORATION [US/US]; Suite 510, 824 Market Street, Wilmington, DE 19801 (US).

(72) Inventors; and

(75) Inventors/Applicants *(for US only)*: WHITLEY, Kevin, T. [US/US]; 5030 Oak Hollow Drive, Acworth, GA 30102 (US). WARFEL, Karl, B. [US/US]; 1296 Pinehurst Road, Greyson, GA 30017 (US). SHAND, Arthur, M. [US/US]; 10881 Big Canoe, Big Canoe, GA 30143 (US).

(74) Agents: PRATT, John, S. et al.; Kilpatrick Stockton LLP, Suite 2800, 1100 Peachtree Street, Atlanta, GA 30309-4530 (US).

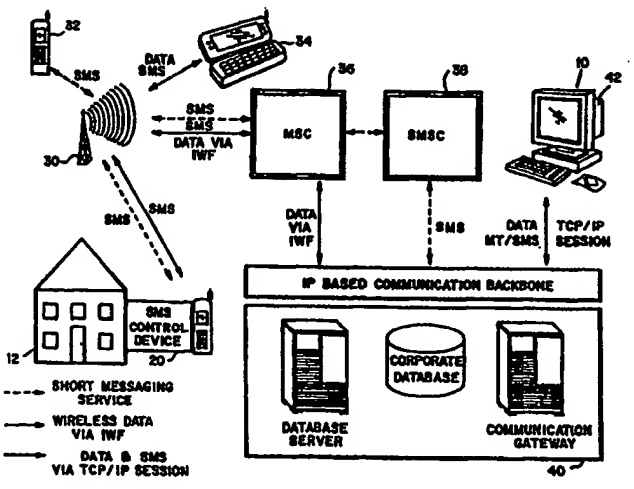
(81) Designated States: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

Published
With international search report.
Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.

(54) Title: WIRELESS TELEMETRY METHODS AND SYSTEMS FOR COMMUNICATING WITH OR CONTROLLING INTELLIGENT DEVICES

(57) Abstract

Methods and apparatus are disclosed for remotely monitoring and controlling via a wireless network various devices deployed in homes and businesses. The present invention allows for monitoring and control of various gateways distributed to remotely located facilities to be monitored and the devices coupled to those gateways to be controlled via a wireless communications network. Preferably, the network is a GSM network adapted to provide short messaging services or any type of wireless network adapted to operate a General Packet Radio System for delivering data over the network. Messages are packaged at each gateway for delivery via the network to a destination terminal, whether a fixed terminal or a mobile station. Likewise, customers may forward data and commands to a particular gateway either from a mobile station or by accessing a fixed terminal, such as through an Internet connection. Transporting messages or commands via the short messaging service of the GSM network or via the GPRS protocol avoids the prohibitive cost of setting up a call for each message and avoids the significant capital costs needed to set up a separate communication network for data delivery.



FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AL	Albania	ES	Spain	LS	Lesotho	SI	Slovenia
AM	Armenia	FI	Finland	LT	Lithuania	SK	Slovakia
AT	Austria	FR	France	LU	Luxembourg	SN	Senegal
AU	Australia	GA	Gabon	LV	Latvia	SZ	Swaziland
AZ	Azerbaijan	GB	United Kingdom	MC	Monaco	TD	Chad
BA	Bosnia and Herzegovina	GE	Georgia	MD	Republic of Moldova	TG	Togo
BB	Barbados	GH	Ghana	MG	Madagascar	TJ	Tajikistan
BE	Belgium	GN	Guinea	MK	The former Yugoslav Republic of Macedonia	TM	Turkmenistan
BF	Burkina Faso	GR	Greece			TR	Turkey
BG	Bulgaria	HU	Hungary	ML	Mali	TT	Trinidad and Tobago
BJ	Benin	IE	Ireland	MN	Mongolia	UA	Ukraine
BR	Brazil	IL	Israel	MR	Mauritania	UG	Uganda
BY	Belarus	IS	Iceland	MW	Malawi	US	United States of America
CA	Canada	IT	Italy	MX	Mexico	UZ	Uzbekistan
CF	Central African Republic	JP	Japan	NE	Niger	VN	Viet Nam
CG	Congo	KE	Kenya	NL	Netherlands	YU	Yugoslavia
CH	Switzerland	KG	Kyrgyzstan	NO	Norway	ZW	Zimbabwe
CI	Côte d'Ivoire	KP	Democratic People's Republic of Korea	NZ	New Zealand		
CM	Cameroon			PL	Poland		
CN	China	KR	Republic of Korea	PT	Portugal		
CU	Cuba	KZ	Kazakstan	RO	Romania		
CZ	Czech Republic	LC	Saint Lucia	RU	Russian Federation		
DE	Germany	LI	Liechtenstein	SD	Sudan		
DK	Denmark	LK	Sri Lanka	SE	Sweden		
EE	Estonia	LR	Liberia	SG	Singapore		

WIRELESS TELEMETRY METHODS AND SYSTEMS FOR COMMUNICATING WITH OR CONTROLLING INTELLIGENT DEVICES

The present invention relates to methods and apparatus for remotely monitoring and controlling via a wireless network various devices deployed in homes and businesses.

RELATED APPLICATIONS

This application claims priority under U.S. law to United States provisional patent application 60/079,215, filed March 24, 1998, which application is hereby incorporated in its entirety by this reference.

BACKGROUND OF THE INVENTION

Numerous systems exist for automated, remote monitoring of various appliances, including electric utility meters and the like. For instance, systems exist that couple utility meters to remotely located databases via the wired Public Switched Telephone Network ("PSTN") so that the meters can be more efficiently and cheaply read remotely. Typically, such meter reading systems couple a database to a gateway that interfaces with the meter and, in many cases, other devices in a particular facility or portion thereof. These systems, however, are generally one way, sending data from the meter to the central processor.

Moreover, even when the system provides for two-way or duplex data communication that allows commands and other data to be down or up loaded to or from the gateway, a complete call must be made between the central processor and the gateway. Such calls are expensive, since they involve the full architecture of the PSTN in delivering the data, even when the amount of data delivered is relatively small. Also, the data or commands must be sent to or from a relatively intelligent central processor to which few persons will have access. This means, for instance, that customers at whose premises gateways are located cannot themselves send data (including commands for devices within the premises) to the gateway via the PSTN.

Systems exist that use short bursts of radio transmission to control and receive data from remote power distribution control terminals. For instance, a company called ITRON owns a U.S. Patent No. 5,475,867 to Blum on such a system, albeit a system that uses supplemental controllers for expanding the fairly limited geographical range of the basic system. This system, however, would be expensive to deploy and operate since an essentially new architecture would need to be deployed.

Several companies, such as CellNet Data, Greenland and possibly ITRON, are trialing meter reading systems that use two-way paging, which provides broader geographic coverage. While such a system eliminates the trouble and expense of setting up a separate call each time data must be up or downloaded, paging messages provide limited payload for data, thereby limiting the potential for controlling and updating the gateway. Also, it is unclear whether such systems will allow users to send data and commands to or receive data from the gateway directly and without the need to go through a central processor or control center, which limits the flexibility of the system for users wishing to receive data about their facilities and remotely control various devices at the facility.

SUMMARY OF THE INVENTION

The present invention overcomes the above problems by providing a system and method for gathering and sending data over an existing wireless network remotely to control and monitor various gateways and the devices coupled to those gateways. A system according to the present invention uses multiple gateways that communicate over a wireless communications network capable of carrying digital data. The wireless communications network allows the gateway to send data and receive commands directly from the customer, which could own or manage the facility in which the gateway is located. The customer can send and receive such data via a mobile station or a fixed terminal. Simultaneously or independently, data and commands may be up and down loaded to or from a control center coupled to the wireless network. Thus, the present invention provides a system and methods for providing customers a virtual direct

connection for routing messages to a gateway from a mobile station or fixed terminal, or vice versa.

The present invention uses multiple control and reporting gateways that are deployed in homes, businesses and other facilities. These gateways are configured to collect data, such as data describing use of electric power or other utilities by the particular facility at which they are located or data describing the status of various sensors after arming of a security system. Also, gateways may be coupled to various devices within the facility in order to control the devices. For instance, gateways may control the lights within a facility according to a pre-programmed pattern that the user may change by communicating new commands via the present invention. Or, gateways may be configured remotely to receive commands and data, which allows remote control over the devices (e.g., home appliances or electronics) with which the gateway may communicate. Each uniquely addressable gateway includes a transceiver capable of communicating over a wireless network.

In one embodiment of the present invention, a monitoring and control system may be provided that receives data from gateways on an essentially real time basis and can send data (including commands) to such gateways at any time over a wireless network. This allows for essentially real time monitoring of the facility at which the gateway is located. Preferably, the wireless network will be a GSM ("Global System for Mobile") communications network capable of providing Short Messaging Services ("SMS"). SMS messages allow users of the network and the gateways to send and receive packets of data (about 160 characters) without setting up an actual call connection. Receiving terminals, whether mobile stations, such as handsets or pagers, or fixed terminals, like computer workstations, reassemble one or multiple related SMS message packets into readable messages, such as an e-mail or page.

In another embodiment, the present invention provides a method for uploading a large data file via the wireless network. For such larger files, an actual circuit-switched call is made from the gateway to a central processor coupled to the wireless network's switch or MSC. The central processor includes a controller with a communications

processor and database server. The communications processor sets up a session with the gateway during which the gateway can upload the file via the wireless network. In a wireless network, large files of digital data from the gateway may be moved from the MSC to a destination via the Inter-Working Function ("IWF"). The central processor can be co-resident with the MSC or coupled to it via another network connection, such as the PSTN or a wireless connection.

An example use for this embodiment involves a program by which the gateway periodically polls the devices it connects to for energy usage rates. Each poll generates a message that is about 100 bytes long. Rather than forwarding each message via the wireless network to the customer or a database, the gateway aggregates all reads for a particular time period and then uploads the entire file to the central processor via the IWF.

A customer may access the central database in order to determine energy or device utilization at the customer's facility. The database can be coupled to a control system that regularly downloads data and commands to the gateways. In that event, the customer can also pass instructions to the control system to forward desired commands or new data to the gateway in order to control the devices coupled to it.

An alternative embodiment of the invention takes advantage of the architecture and protocols of the GPRS or General Packet Radio System to deliver data from and commands to gateways. The GPRS protocol provides an architecture and various interface layers (both hardware and software) for implementing a packet data system across existing wireless networks, regardless of the type of wireless protocol (e.g., TDMA, CDMA, GSM) used by those networks. Certain GPRS protocols for implementing this architecture are described in the following documents, each of which is incorporated in its entirety by this reference: (1) GPRS MS-SGSN LLC, GSM 04.64 (ETSI No. TS 101 351); (2) GPRS MS-SGSN SNDCP, GSM 04.65 (ETSI No. TS 101 297); (3) IW PLMN GPRS-PDN GSM 09.60 (ETSI No. EN 301 347); (4) GPRS PDN, GSM 09.61 (ETSI No. TS 101 348); and (5) Digital Cellular Telecommunications System (Phase 2+): GPRS Project scheduling and open issues, GSM 10.60.

The present invention implements a GPRS over a wireless network, such as a GSM network. Such a network uses base station controllers to route voice communications to the existing wireless system infrastructure, such as MSCs, HLRs and the like. In a GPRS capable network, however, the handshakes generated by wireless devices inform the base stations that a particular transaction is a packet data transaction; in turn, the base stations so inform their base station controller, which can then route the packet data to a support node rather than an MSC and its supporting infrastructure. The support node may communicate with other public wireless or wired networks or with an IP (internet protocol) network. By, for instance, repackaging the wireless data message into an internet packet, the support node interfaces more easily between the base stations and the IP network than existing wireless systems. This protocol may result in not only higher data transmission rates (i.e, larger data payloads than the limited SMS packets), but also in faster data delivery since data transfer does not require signalling to set up connections among network elements.

Whether using GSM short messaging services or GPRS messages to deliver data to and from multiple gateways located throughout a particular region, the present invention performs the following processes:

- Formatting messages for wireless delivery to and from particular or groups of gateways. In an SMS implementation, this may be accomplished at the gateway, which formulates messages to other terminals into a short message format, or, if the message is destined to a particular gateway, at the originating terminal. In a GPRS implementation, the support node places messages in varying formats depending on which network over which they will be transmitted and appropriate to that network. Additionally, as packet data messages are transferred among network elements in the GPRS, information is added or substracted from the message header depending on the particular stage of intra-network transfer.
- Transmitting the message from the gateway to a network element or vice versa. The Short Messaging Service Control center handles this functionality, since it

is programmed to identify and route SMS messages to their appropriate destination. In the GPRS implementation, transmission is accomplished by first having the base station controllers forward packet data messages to a support node router, which routes the messages to their desired destination.

- Delivering messages to the user directly or to a central processor for storing and processing. In either implementation, messages may be delivered via an IP network or other public or private communications network.
- Routing commands or data to one or groups of gateways. The commands or data can be formulated at and sent out by the central processor over either the GPRS or SMS implementation. However, because each gateway is uniquely addressable through, for instance, a phone number, IP address, or similar identifier, the customer can formulate messages or commands that will be routed directly from the customer's mobile station or fixed terminal to the gateway.

The present invention accordingly aims to achieve at least one, multiple or all of the following objectives:

To provide a system and method for monitoring in real time and for controlling remotely located gateways;

To provide a method for allowing customers to remotely monitor and control devices located in the customer's facility that communicate with a gateway;

To provide a method for allowing customers to receive monitoring information about activities at their facility via a mobile station or a fixed terminal;

To additionally provide a method that allows customers to control the gateway and devices coupled to the gateway from their mobile station or a fixed terminal communicating over the wireless network;

To provide a method for customers to forward commands and data to a central processor for delivery to the gateway;

To take advantage of the short messaging service capability of a deployed GSM network to more efficiently provide remote monitoring and control of multiple distributed gateways;

To provide a central processor for receiving monitoring messages from remotely located gateways and aggregating those messages to track activities at the facility associated with a particular gateway; and

To provide methods for customers to access data stored at the central processor.

Other objects, features and advantages of the present invention will become apparent upon reading the rest of this document.

BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 shows a block diagram of a system according to the present invention that implements various methods for receiving and sending data from and to a selected gateway.

Figure 2 shows a simplified block diagram of the system shown in Figure 1, with labels indicating the functionality of various system components.

Figure 3 shows a block diagram of one embodiment of the system shown in Figure 1 detailing the method and system components used to route SMS messages.

Figure 4 shows a block diagram of an alternative embodiment of a wireless GSM system using the GPRS format and architecture to route data and commands to and from a gateway.

DETAILED DESCRIPTION OF THE DRAWINGS

System Overview: SMS Application

Figure 1 shows a system 10 for implementing the methods of the present invention. System 10 monitors and controls various devices deployed in multiple facilities 12, which could be a home, office building or industrial complex. Each facility 12, or portion thereof, has a gateway 20 that acts as a data collection and control device, as defined

below. Data received from various devices within and associated with facility 12 is packaged by gateway 20 for forwarding via a wireless digital communications network, which may be either a cellular network or a Personal Communication System ("PCS") network. The system 10 of the present invention aims to route messages from various gateways 20 to terminals. A terminal may be a fixed terminal, such as central processor 40, an ISDN terminal or a workstation 35 (shown in Figure 3), as well as a mobile station. The phrase "mobile station" means a device for sending and receiving data over a wireless network and includes, for instance, a pager 31, a handset 32 or an internet communicator 34 that may be a Nokia 9000 GSM communicator capable of accessing the internet via a GSM wireless network.

Such a network may have a number of cellular sites, each served by a tower 30 holding a base station and appropriate equipment for receiving and transmitting wireless voice and data messages. Those messages are routed to the appropriate terminal, such as a pager 31, cellular handset 32, cellular internet communicator 34, or workstation 35, by the mobile switching center ("MSC") 36 that may be a switch provided by Nortel, Lucent, Erricson or other switch makers. If the messages are Short Messaging Service ("SMS") messages, MSC 36 receives each SMS message, determines it is an SMS and switches the SMS message to a SMSC ("Short Message Service Center") 38, which may be a platform, such as one provided by Logica-Aldiscon, Inc., of Lexington Massachusetts, either co-located with the MSC 36 or coupled to it via a communication link. SMSC 38 listens on a socket for SMS messages in order to route received SMS messages to the appropriate destination. Additionally, SMSC 38 receives outgoing SMS messages and reformats those messages for transmission through the MSC 36. Typically, for instance, SMSC 38 may link to MSC 36 via a SS7 data communication link (as shown in Figure 3); SMSC 38 can then route SMS messages to subscribers roaming in other wireless networks via Signal Transfer Points within the SS7 network.

The term "gateway" includes any device that (a) provides a physical interface between internal devices associated with a particular facility 12 and external networks and, optionally, (b) may provide a platform for delivering various services to the facility

12. Thus, gateways 20 may couple to a remote facility 12 and may monitor, control or both monitor and control various devices within the facility 12, such as lights, security sensors, an answering machine, a home computer, etc. For instance, gateway 20 may be a set-top box, personal computer or other device provided with a processor, such as an Intel 386 or 486 processor, and communicates with various, optionally addressable, devices located throughout the facility. Gateway 20, which may be uniquely addressable, also has a wireless transceiver for sending and receiving communications via a digital wireless network.

Additionally, for the embodiment of the present invention that uses a GSM network, gateway 20 is an integrated GSM enabled communications device programmed to format and manage data packets sent and received via the short messaging service provided by a GSM network, as described further below. Gateway 20 sends and receives SMS messages via and as part of the architecture of a GSM network. For instance, gateway 20 may be a GSM device that allows transfer of data, facsimile or e-mail messages, but which does not have voice capability. These messages can be formulated and read by a SIM or "Subscriber Identity Module" card that can be plugged in or otherwise incorporated into gateway 20. Gateway 20 is programmed to generate text for an outgoing SMS message, place it in the SIM card of the gateway 20 and initiate the data transfer over the GSM network. Thus, gateway 20 may use bi-directional host computer to SMSC programming code to control the SIM card interface and the automatic SMS message routing application. The GSM network also delivers messages to the correct location and gateway 20 confirms the accuracy of any received message to the sender. When an SMS message is received at the gateway 20, the gateway 20 reads the SMS message from the SIM card and processes the contents of the SMS message as though it was entered directly from a command console.

Figure 3 shows the methods and components of system 10 used for formulating and reading SMS messages sent and received by and from SMSC 38 to and from a selected gateway 20. SMSC 38 may be provided with a SMS Application that facilitates sending and monitoring of short messages between an end user and the SMSC 38. The

messages can be generated by using a GUI based front end application or by delivering a message in a pre-defined format to the relational database tables used to store outgoing messages. The SMS Application queues outgoing messages and sends them one at a time to the SMSC 38 for distribution on the GSM network. In turn, the SMSC 38 returns a message indicating the delivery status of the outgoing message. SMSC 38 may communicate over an internet network with e-mail users or over a TNPP network with pagers; likewise, through those networks or the PSTN, users may communicate with the SMSC 38 to formulate and send messages for subscribers. Finally, Figure 3 shows the OSS/LAN support structure for supporting operations of an SMSC 38.

The SMS Application can be configured to receive an SMS message from the SMSC 38. In this configuration, the SMSC 38 will receive a message from the GSM network and forward it via a direct connection to the SMS Application rather than initiating a message transfer to another mobile station or terminal via the GSM network. Through the incorporation of a fully bi-directional message transfer system, a wireless end user may (a) receive messages and initiate responses via the GSM network to control devices attached to gateway 20 or (b) update the application database directly. Thus, as Figure 2 indicates, DCS Messaging software, developed by BellSouth Mobility, and deployed on the central processor 40 may be programmed to perform at least the following tasks:

- **Front End Client Application** - This task enables end users to input a text message, up to 190 bytes, and send the message directly to the SMSC 38 for distribution across the GSM network. A graphical user interface or GUI allows for flexible, intuitive input and output. After entry of messages, this application updates the Database (such as databases provided by the Oracle Corporation) Tables with the message data.
- **Database Tables** - This task stores outgoing text messages, message status for inquiry and resolution and routing information for the

message. The database tables can be populated by the front end client application or directly from another server process.

- **Message Server** - This task mediates between various Database Tables and the socket used for communicating with the SMSC 38. It will query Database Tables for new outgoing messages and query the SMSC 38 to check the status of existing messages, which are routed to central processor 40 for storage in the Database Tables.
- **Socket Layer** - This task performs the bi-directional communication between the Message Server and the SMSC.

An API on workstation 42 accesses the DCS Messaging software, which acts as a server to provide the GUI that allows input of new messages into the central processor 40.

Alternatively, by reconfiguring MSC 36 to route SMS messages and reconfiguring gateway 20 to listen for such messages, the system 10 could be configured so that SMS messages go directly to the gateway 20 without passing through a SMSC 38. Such distributed message delivery eliminates possible routing errors at SMSC 38. A central processor 40 may also receive or be copied on the messages from gateway 20 to handset 32 or communicator 34. On the other hand, this distributed architecture would be substantially more expensive and complex, requiring dedicated SS7 links between MSC 36 and each of gateways 20, which also would have to be provided with software to enable SMS routing throughout the network.

Methods for Delivering SMS Messages

In one embodiment of this invention, the wireless network is a GSM network represented by tower 30, pager 31, handset 32, communicator 34, and MSC 36, which may be a Nortel switch running GSM. This network provides integrated voice and enhanced digital services, including e-mail or SMS to the user's mobile station, which may also have integrated voice mail, caller ID functions, a fax mailbox, etc. The GSM standard defines a short messaging service, which allows users of the network to send and receive short data messages, usually in the form of alphanumeric text. Such messages can be sent and received even during an on-going communication session. SMS messages

may be configured for delivery to a particular identified terminal, such as handset 32, or they may be broadcast throughout a specific geographical area by using the SMS cell broadcast feature. This broadcasting function, described in the GSM 03.41 and GSM 04.11 that are incorporated herein by this reference, is useful for reprogramming multiple gateways 20 simultaneously or warning customers at various facilities 12 of particular events in their geographic area (e.g., a weather warning or the like).

A system 10 using a GSM network allows SMS messages with a payload of about 160 bytes or characters to be sent at 9600 Baud from a gateway 20 to a terminal via a GSM network and supporting sub-components. A GSM network supports multiple points of origin or destination of the SMS messages, allowing for two-way communication among terminals and gateways 20, each of which are provided with a unique identifier, such as a phone number or an IP address. Significantly, this architecture allows data communications among gateways 20 and mobile stations, like pager 31, handsets 32 and communicator 34, or fixed terminals, through virtual direct connections among all of those devices using the GSM network and supporting sub-components for transport. This provides a virtual point-to-point connection via the GSM network, and the SMS messages may or may not be sent to or through the central processor 40. By taking advantage of the SMS services provided in a GSM network, the network functionality required for forwarding short data messages to and from gateways 20 need not be developed from scratch.

By way of example, assume that gateway 20 monitors facility 12 for energy usage data or alarms indicating a security breach as well as communicates with various electronic devices, such as an electronic thermostat or lights. The digital GSM network allows gateway 20 to periodically upload a SMS message, providing essentially real time monitoring of energy usage at the particular facility 12. For instance, the GSM network may allow message uploading as frequently as every 5 minutes. Gateway 20 could be programmed to provide periodic (e.g., hourly) reports on energy usage. If a security sensor coupled to gateway 20 triggers, gateway 20 could be configured to package and transmit, usually on a priority basis, a SMS message indicating a breach in security, as

well as other data including the date and time, the location of the facilities, or the location of the sensor.

In another embodiment of this invention, a microcell may be provided for very large facilities 12, such as industrial complexes, manufacturing facilities, distribution facilities or the like. A microcell allows persons within a large facility 12 to communicate with one another and the gateway 20 for that facility 12 via handsets 32. Such communications may be routed via MSC 36. For instance, such a microcell would provide the facility 12 with a wireless PBX, wireless data connectivity to corporate databases or wireless internet access.

Methods for Delivering Data via the IWF

An alternative embodiment of the invention allows gateway 20 efficiently to upload a large file of information to the central processor 40. By way of example, gateway 20 could have been instructed to poll devices coupled to it throughout the day to determine their energy usage. Then, instead of immediately reporting the results of each poll, gateway 20 buffers the information within memory for uploading to central processor 40 on command or at a preselected time. If the file is fairly large, rather than forwarding the file by sending one or multiple SMS messages that would need to be reassembled, gateway 20 has the capability to upload the file via an Inter Working Function (IWF) protocol. To do so, gateway 20 sets up a call to central processor 40, during which call gateway 20 packages and forwards the file via the IWF protocol. Although uploading data via the IWF transfer process uses a more expensive voice channel rather than a data channel, it allows faster upload of large files.

Delivery of Data via GPRS

Figure 4 shows a wireless network 100 provided with GPRS functionality. Network 100 is a GSM network, but could utilize other protocols, including TDMA, CDMA or the like so long as those networks operate the General Packet Radio System ("GPRS") protocols. Network 100 has multiple towers 30 coupled to multiple base stations ("BTS") 52, each controlled by a base station controller ("BSC") 50. BSC 50 has been modified to route calls to MSC 36, communicating with a conventional HLR

database 37. Note that the gateway 20 in Figure 4 has the same functionality as the gateway 20 in Figures 1 through 3, but may be implemented differently. For instance, since a GPRS may be deployed in other than GSM networks, a SIM card need not be provided to gateway 20, which instead may simply be outfitted with a cellular transceiver appropriate to the type of cellular network 100 in which the gateway 20 will be transmitting messages.

BSC 50 identifies and routes data messages to a support node 60. BSC 50 identifies data messages in a GPRS system because handshake messages from the gateway 20 inform the base station 52 that the particular transaction is a packet data transaction. Other methods exist for identifying such transactions, including examining identifiers placed in the data message by the user toggling certain functions on the delivery device or by analyzing the message itself. In any event, data messages from gateway 20 are assembled by a PAD into packets per the GPRS protocol specification for delivery to the support node 60. Figure 4 shows Gb and other interfaces that specify header information and such for allowing various network elements to communicate with one another. Support node 60 is a SGSN/GGSN (Server GSM Support Node or Gateway GSM Support Node), such as a Passport carrier grade data platform system available from Nortel Networks or any other platform suitable for use as a router. Figure 4 shows that support node 60 packages data messages that arrive from facility 20's gateway 20 for delivery over one of many types of networks to a central processor 40 (shown in Figures 1 and 2). The delivery network may be an IP network, an X.25 network, or other public land/mobile networks 62. Network 100 may also deliver messages, queries or commands from a central processor 40 (or another terminal) to the facility 12 that couples via an over-the-air interface to the base station 30 shown in Figure 4.

To send a message to a particular gateway 20, a user accesses the network 100 through a mobile station or fixed terminal. The user enters the gateway 20's identifier and formulates a message. The message, whether sent over a public telephone, via a workstation 42 as e-mail, or through a mobile cellular handset 32, is sent by the network 100 to the support node 60. Support node 60 reads the identifier and associates the

identifier with the BSC 50 that is associated with the destination gateway 20 and routes the message to that BSC 50, which then broadcasts the message via BTS 30.

Note that as in the SMS implementation, a common message to multiple gateways 20 may be sent over network 100. This is feature may be used to alert gateways 20 to a particular condition (e.g., weather, etc.) common to the geographical area in which the gateways are deployed or to send instructions to multiple gateways 20 controlled by a single user. Messages may be broadcast, for instance, to all gateways 20 with a common NPN in their identifying phone number. Messages with that NPN may cause the support node 60 may to do a table look-up and determine the particular gateways associated with the NPN; thereafter, the support node 60 will route the same message to each such gateway 20 by instructing each BSC 50 to forward the message to each applicable destination. Of course, skilled persons will recognize other means than a common NPN for specifying a group of gateways 20 to which a common message may be broadcast.

By using GPRS to transport data messages to and from gateway 20, the network 100 is able to transport messages larger than the 160 bytes allowed in an SMS message. Also, GPRS enhances wireless services by emphasizing internet protocol (IP) technology to allow seamless operation with the internet, packet-oriented data services, and inter-working with legacy wireless systems. For instance, GPRS provides variable data rates for transmitting messages via the over-the-air interface between wireless device and base station that range from 11.2 to 22.8 kbps for a single slot allocation. Multi-slot configurations provide 22.4 to 182.4 kbps data throughput. Future enhancements to GPRS data rates are expected to provide 69+ kbps bit rate over the air interface, using a different modulation scheme. Data rates in packet mode are expected in the 45-550 kbps range.

Collating and Accessing Data at the Central Processor

As described and shown in Figures 1 and 2, central processor 40 receives data from multiple gateways 20. Central processor 40 has a database for storing information uploaded via SMS messages or the IWF protocol. The stored information may be collated and organized according to customers, facility, etc. Customers may access the database

via the communication gateway. For instance, customers may use a workstation 42 to set up a TCP/IP session via an Internet Protocol ("IP") communication network, such as provided by a local Internet Service Provider ("ISP"). Through the internet connection, customers can easily view data describing the energy usage of devices at facility 12, as well as check on the status of various other activities logged into the database at the central processor 40. Note that customers can set up a TCP/IP session either through a terminal connected to an ISP, such as workstation 35, or via the communicator 34 that connects to the internet via a wireless network.

Additionally, while viewing data describing activities at facility 12, the customer may also input commands to be forwarded to various devices at the facility 12. Central processor 40 packages those commands as an SMS message and downloads them to a particular gateway 20 through the SMSC 38. Although Figures 1 and 2 show central processor 40 coupled to MSC 36 and SMSC 38 via a PSTN connection, central processor 40 could be co-located with those platforms or communicate with them via a different communications link. Alternatively, central processor 40 may be provided as part of, or couple to, a support node 60 so that messages or commands entered by customers may be formatted as a GPRS packet for transmission over the network 100 that operates a GPRS, as shown in Figure 4.

An example use of the methods and systems of the present invention is described as follows. Gateway 20 is programmed to poll each device coupled to it to determine the device's energy use. For instance, gateway 20 can be connected to the thermostat, refrigerator, water heater, and washer/dryer in a particular residential facility as well as to the general meter for that facility. Gateway 20 polls those devices every hour to determine their energy use. Gateway 20 then forwards the poll results to the SIM card, which generates a SMS message containing the poll results as well as the date, time and location of gateway 20. The SMS message is then transferred from gateway 20 to central processor 40 via the MSC 36 and SMSC 38. Central processor 40 collates each hourly message from gateway 20 to form a visual graph depicting overall and individual device energy usage at facility 12. This allows a customer to access the database coupled to the

central processor 40 via the internet and determine the overall energy usage at a particular facility 12. The customer can then, based on the energy usage trends, input commands to adjust the thermostat, or turn off one of the devices (such as the washer/dryer or water heater) coupled to the gateway 20 in order to save energy. Likewise, the user can input other commands for delivery to the gateway 20. For instance, the user could instruct the gateway 20 to enable or disenable an alarm system at a particular facility 12 at a particular time and for a particular time period. The present invention also allows the gateway 20 to be programmed to copy messages on energy uses or alarm triggers at a particular facility 12 directly to a handset 32 associated with the owner of facility 12. Likewise, gateway 20 can have its normal routine interrupted by a priority data message. For instance, if gateway 20 couples to alarm sensors at the facility 12 and one sensor alerts to an intruder, gateway 20 can be programmed to send a message both to the handset 32 in order to alert the owner of the facility 12 and to the central processor 40, which processes the message in order to alert the authorities to the security breech. These are, of course, just two of many applications for which gateway 20 and the present invention can be used.

The foregoing is provided for purposes of explanation and disclosure of preferred embodiments of the present invention. For instance, a preferred embodiment of this invention involves using a GSM network with a short messaging service capability or a GPRS capable wireless system. It is expected that such capabilities or their equivalent will be provided in other standard types of wireless networks, in which case the preferred embodiment of this invention may be easily adapted for use in such networks. Further modifications and adaptations to the described embodiments will be apparent to those skilled in the art -- such as upgrades or modifications to the GSM or GPRS protocols -- and may be made without departing from the scope or spirit of the invention and the following claims.

What is claimed is:

1. A method for remotely monitoring or controlling activities within multiple facilities geographically dispersed within at least one wireless network adapted to transmit GSM short messages to allow the facilities to communicate with other terminals without making a wireless telephone call, the method comprising:

(a) providing the selected facility with a gateway comprising a processor, a transceiver and a SIM card adapted to transmit short messaging service messages;

(b) periodically causing the gateway to formulate a short message reporting on activities within the selected facility at which the gateway is located;

(c) transmitting the message over the GSM network via a Short Messaging Center coupled to a Mobile Switching Center within the GSM network; and

(d) receiving the message at a terminal selected from a group of devices consisting of a mobile station, a workstation and a central processor.

2. A method according to claim 1 further comprising the step of controlling devices located at a selected facility by formulating a control message and forwarding it via the GSM network to the selected facility, wherein the gateway at the facility processes the control message in order to control one or more devices coupled to the gateway.

3. A method according to claims 1 or 2 further comprising the step of collecting multiple messages from the selected facility, storing those messages in a database associated with a central processor and processing the stored messages at the central processor to display information concerning activities at the selected facility.

4. A method according to claim 2 in which the control message is formulated by a user on a communication device selected from the group consisting of a pager, a cellular handset, an internet wireless communicator or a workstation.

5. A method according to claim 4 further comprising the step of coupling the central processor to an internet protocol network to allow users to view the displayed information concerning activities at the selected facility.

6. A method according to claims 1 to 5 further comprising the step of monitoring energy uses within the selected facility by periodically polling at least one device therein.

7. A method according to claim 6 further comprising the step of aggregating the periodic polls and uploading the aggregated information to a user's terminal.

8. A system for transmitting data to and from multiple gateways deployed in homes or businesses and capable of collecting data concerning usage or operation of various devices located in the homes or businesses, the system comprising:

a) multiple gateways, each adapted to formulate or accept a wireless packet data transmission;

b) a base station controller adapted to route data forwarded to the base station controller via wireless transmission to a support node for formatting the message into a format selected from the group consisting of internet protocol, X.25 protocol and a data protocol for transmission over public land or mobile networks; and

c) a terminal for receiving the formatted messages.

9. A system according to claim 8 wherein the terminal is a central processor that collates the formatted messages to describe the conditions within the facility associated with a selected one of the multiple gateways.

10. A system according to claim 9 further comprising a workstation for accessing the formatted messages collated by the central processor.

11. A system according to claim 10 wherein the workstation allows entry of commands to be delivered via the support node to one or groups of the multiple gateways.

12. A system according to claims 8 to 10 further comprising a mobile station or a fixed terminal from which a user may formulate and send a message directly to one or groups of the multiple gateways.

13. A method for using a wireless network to deliver messages from or to each of multiple gateways that are deployed in geographically-dispersed facilities comprising:

a) formulating a message for wireless transmission according to an SMS or GPRS format;

b) transmitting the message to a network element for identifying that message; and

c) transferring the message from the network element to a central processor for collating the transferred messages with other messages or data related to a selected gateway.

14. A method according to claim 13 in which the network element is a Short Messaging Service Center ("SMSC").

15. A method according to claim 14 further comprising the step of communicating to the selected gateway by formulating a message and delivering it to the SMSC and causing the SMSC to forward the message to the selected gateway.

16. A method according to claim 13 in which the network element is a base station controller that determines that the message is a GPRS data transmission and routes the message to a second network element comprising a support node.

17. A method according to claim 16 further comprising the step of communicating to the selected gateway by formulating a message and delivering it to the support node and causing the support node to forward the message to the selected gateway.

18. A method according to any of claims 13 through 17 in which the transmitting step comprises the step of coupling the network element to an Internet Protocol network for forwarding the message to the central processor.

19. A method according to any of claims 13 through 18 in which the formulating step occurs when a user formulates the message from a mobile station.

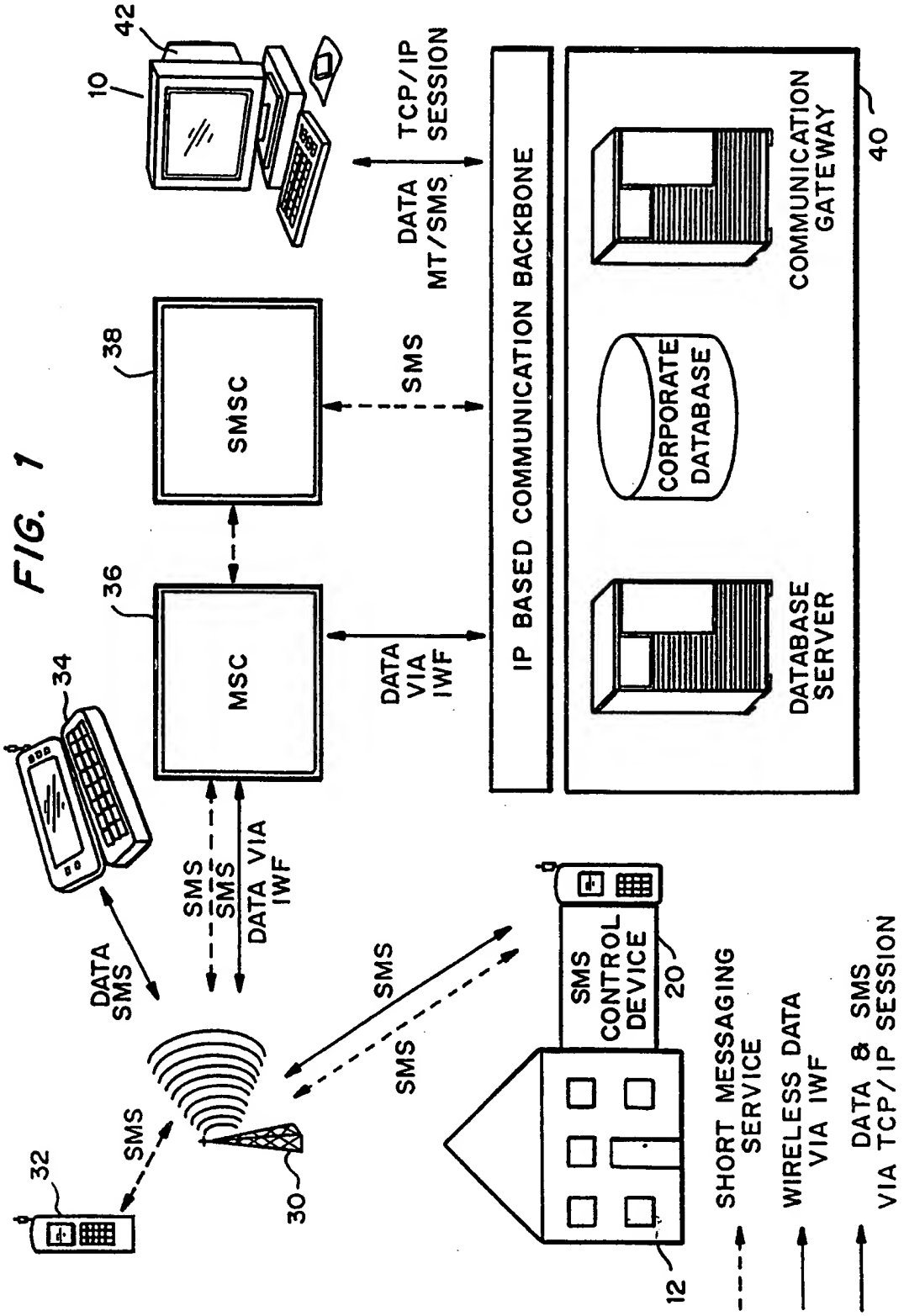

10
42
TCP/IP SESSION
DATA MT/SMS
IP BASED COMMUNICATION BACKBONE
COMMUNICATION GATEWAY
40
CORPORATE DATABASE
DATABASE SERVER
38
SMSC
SMS
36
MSC
DATA VIA IWF
34
SMS
SMS
DATA VIA IWF
DATA SMS
SMS
SMS
SMS CONTROL DEVICE
20
12
32
SMS
30
SHORT MESSAGING SERVICE
WIRELESS DATA VIA IWF
DATA & SMS VIA TCP/IP SESSION

FIG. 1

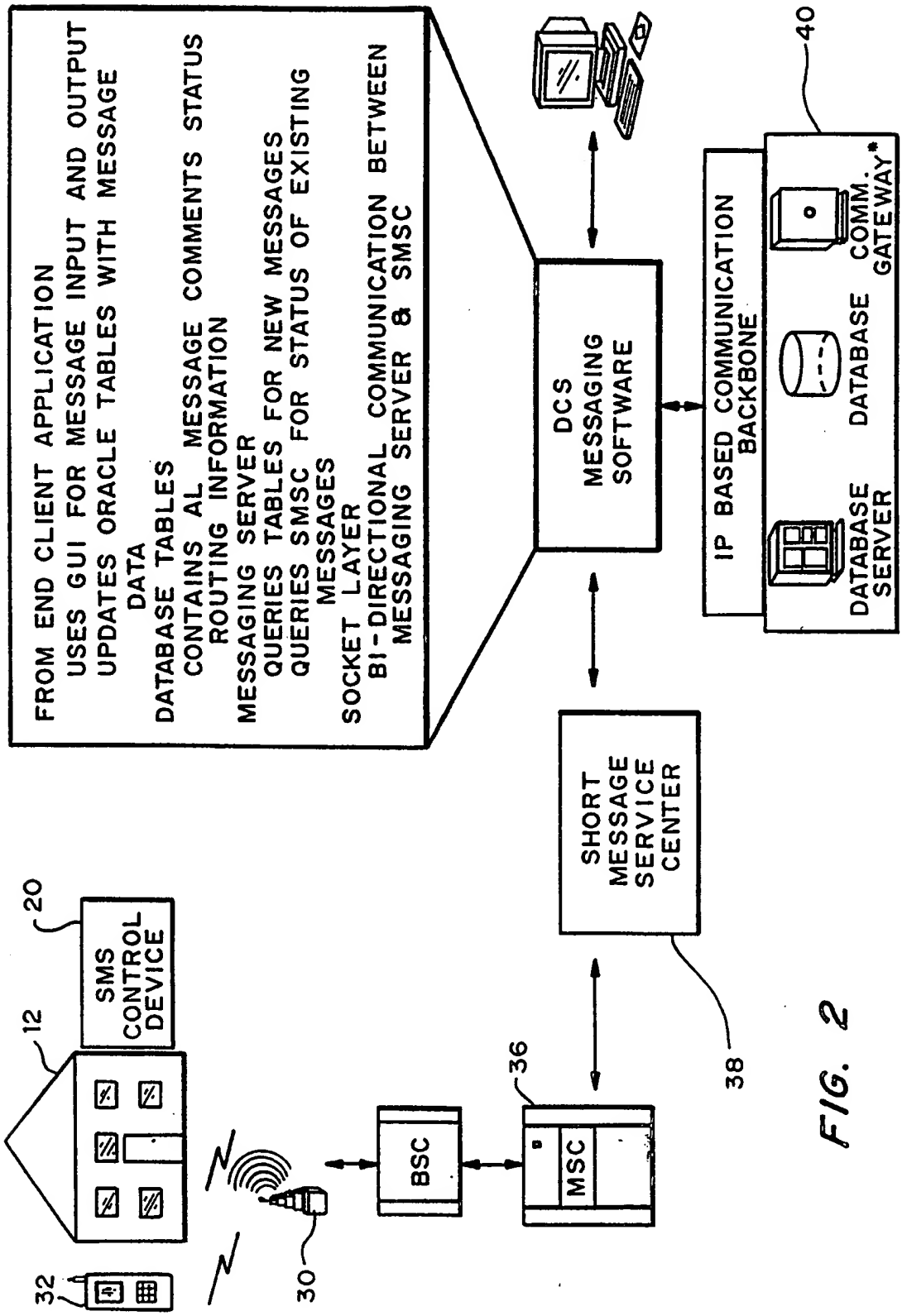

FROM END CLIENT APPLICATION
USES GUI FOR MESSAGE INPUT AND OUTPUT
UPDATES ORACLE TABLES WITH MESSAGE DATA
DATABASE TABLES
CONTAINS AL MESSAGE COMMENTS STATUS ROUTING INFORMATION
MESSAGING SERVER
QUERIES TABLES FOR NEW MESSAGES
QUERIES SMSC FOR STATUS OF EXISTING MESSAGES
SOCKET LAYER
BI-DIRECTIONAL COMMUNICATION BETWEEN MESSAGING SERVER & SMSC
DCS MESSAGING SOFTWARE
IP BASED COMMUNICATION BACKBONE
DATABASE SERVER
DATABASE
COMM. GATEWAY*
40
SHORT MESSAGE SERVICE CENTER
38
SMS CONTROL DEVICE
20
12
32
30
BSC
MSC
36

FIG. 2

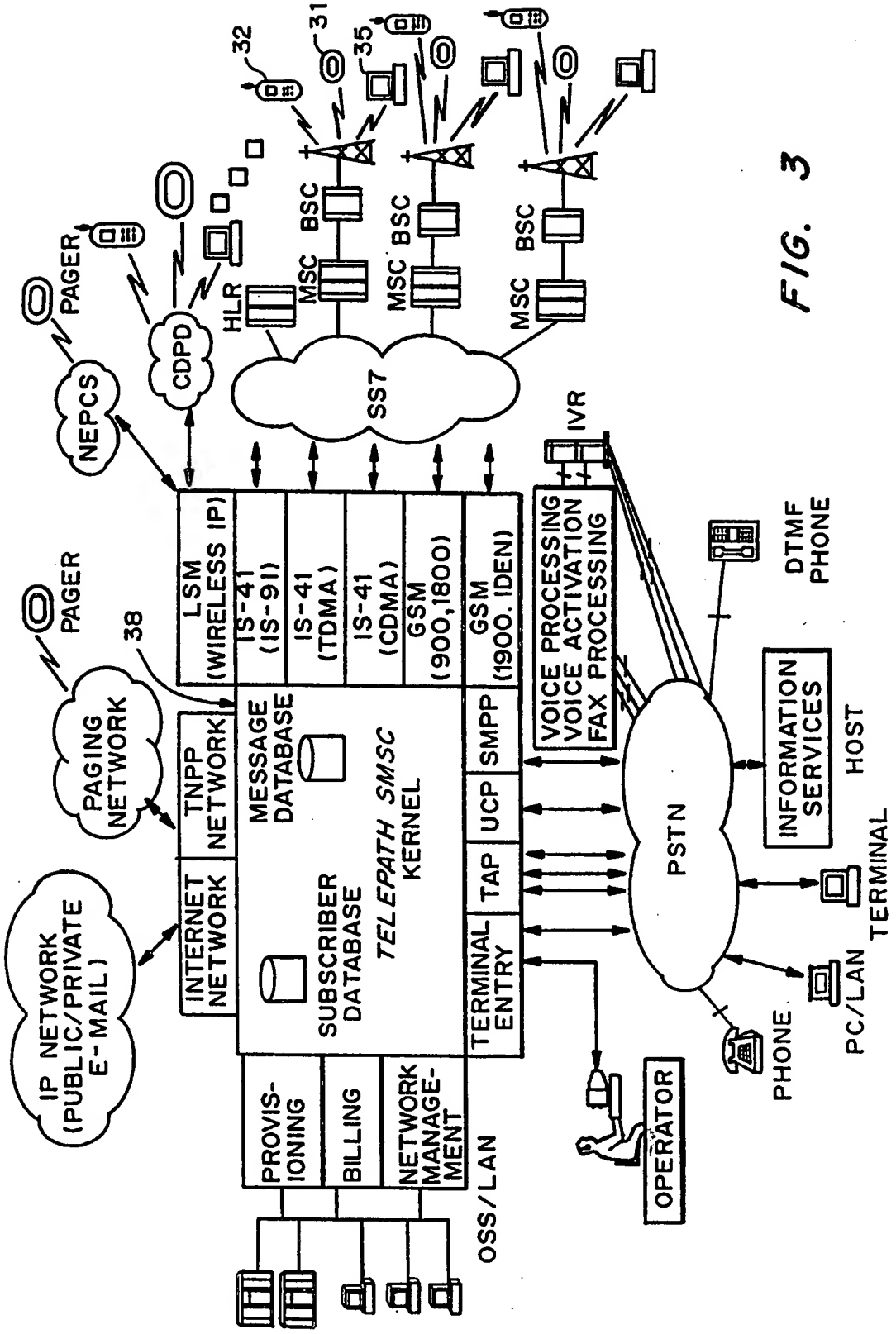

32
31
35
BSC
MSC
HLR
CDPD
PAGER
NEPCS
SS7
IVR
LSM (WIRELESS IP)
IS-41 (IS-91)
IS-41 (TDMA)
IS-41 (CDMA)
GSM (900,1800)
GSM (1900. IDEN)
VOICE PROCESSING VOICE ACTIVATION FAX PROCESSING
DTMF PHONE
38
PAGING NETWORK
TNPP NETWORK
MESSAGE DATABASE
SMPP
UCP
TAP
TERMINAL ENTRY
INTERNET NETWORK
SUBSCRIBER DATABASE
TELEPATH SMSC KERNEL
PSTN
INFORMATION SERVICES
HOST
IP NETWORK (PUBLIC/PRIVATE E-MAIL)
PROVIS-IONING
BILLING
NETWORK MANAGE-MENT
OSS/LAN
OPERATOR
PHONE
PC/LAN
TERMINAL

FIG. 3

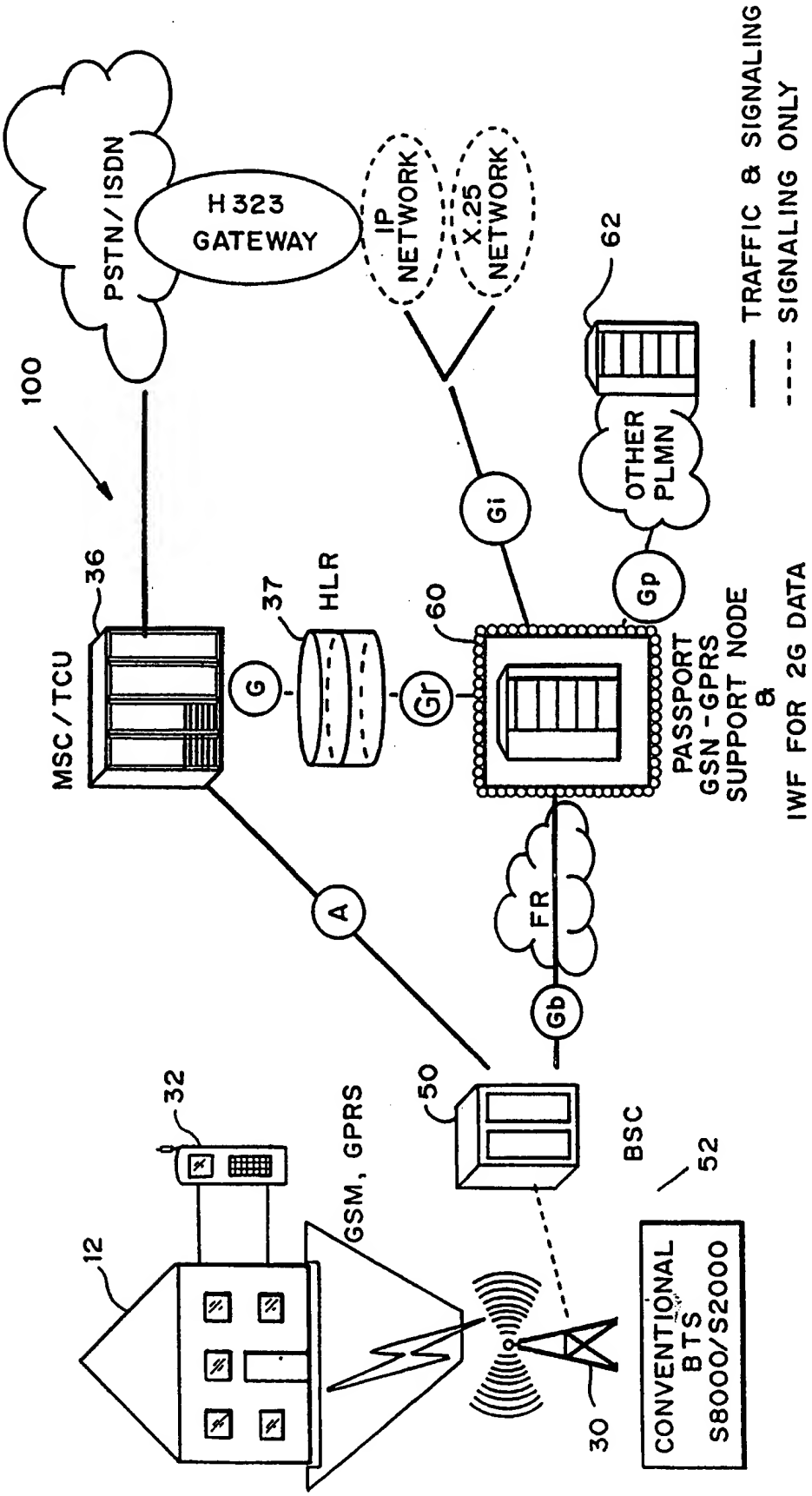

PSTN/ISDN
H323 GATEWAY
IP NETWORK
X.25 NETWORK
100
62
OTHER PLMN
TRAFFIC & SIGNALING
SIGNALING ONLY
Gi
Gp
36
MSC/TCU
37
HLR
G
Gr
60
PASSPORT GSN-GPRS SUPPORT NODE & IWF FOR 2G DATA
A
FR
Gb
32
50
BSC
52
GSM, GPRS
12
30
CONVENTIONAL BTS S8000/S2000

FIG. 4

INTERNATIONAL SEARCH REPORT

Ional Application No
PCT/US 99/06429

A. CLASSIFICATION OF SUBJECT MATTER
IPC 6 H04Q7/22 G08C17/02 H04M11/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 6 H04Q H04M G08C

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 719 918 A (SERBETCIOUGLU BEKIR ET AL) 17 February 1998 (1998-02-17) column 5, line 57 - column 6, line 67 column 14, line 59 - column 15, line 48 ---	1-19
X A	DE 297 17 504 U (HELICOM ENTWICKLUNGSGES) 11 December 1997 (1997-12-11) page 1, line 19 - page 2, line 39 ---	1-4, 13-15 6,8-12, 19
A	EP 0 645 941 A (SEL ALCATEL AG ;ALCATEL NV (NL)) 29 March 1995 (1995-03-29) column 3, line 50 - column 5, line 56 --- -/--	1-4, 8-17,19

[X] Further documents are listed in the continuation of box C.

[X] Patent family members are listed in annex.

° Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
14 July 1999	20/07/1999

Name and mailing address of the ISA	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Pham, P

1

Form PCT/ISA/210 (second sheet) (July 1992)

INTERNATIONAL SEARCH REPORT

Inte .onal Application No
PCT/US 99/06429

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication,where appropriate, of the relevant passages	Relevant to claim No.
A	WO 95 24791 A (BELLSOUTH CORP) 14 September 1995 (1995-09-14) page 13, line 13 - page 16, line 34 page 34, line 32 - page 35, line 35	1-4, 6-11,13, 19

1

Form PCT/ISA/210 (continuation of second sheet) (July 1992)

INTERNATIONAL SEARCH REPORT

Information on patent family members

Inte. onal Application No
PCT/US 99/06429

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 5719918 A	17-02-1998	NONE	
DE 29717504 U	11-12-1997	NONE	
EP 0645941 A	29-03-1995	DE 4332758 A	30-03-1995
WO 9524791 A	14-09-1995	US 5546444 A	13-08-1996
		AU 682208 B	25-09-1997
		AU 7555594 A	25-09-1995
		BR 9408553 A	19-08-1997
		CA 2185230 A	14-09-1995
		CN 1145711 A	19-03-1997
		EP 0753230 A	15-01-1997
		JP 10500262 T	06-01-1998
		NZ 271792 A	29-01-1997
		US 5526401 A	11-06-1996
		US 5794144 A	11-08-1998

7000 1670 0009 4876 5763

ATLANTA
12-19-01
GA

U.S. POSTAGE
$5.55
Neopost
METER
9502168

FIRST CLASS MAIL

KILPATRICK
STOCKTON LLP

kstark
Suite 2800 1100 Peachtree St.
Atlanta GA 30309

MR. KEVIN THOMAS WHITLEY
5030 OAK HOLLOW DRIVE
ACWORTH, GEORGIA 30102

RETURNED TO SENDER
REASON CHECKED
Unclaimed
Refused
Attempted-Not known
Insufficient Address
No such street number
No such office in state
Do not remail in this envelope

FIRST NOTICE
DEC 20 '01
RETURN
JAN 04 '02
SECOND NOTICE

KILPATRICK STOCKTON LLP
Attorneys at Law

Suite 2800 1100 Peachtree St.
Atlanta GA 30309-4530
t 404 815 6500 f 404 815 6555
www.KilpatrickStockton.com

(5)

direct dial 404 685 6761
KStark@KilpatrickStockton.com

January 25, 2002

VIA CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Karl Bernard Warfel
12819 SE 38th St.
Suite 261
Bellevue, WA 98006

Re: United States Patent Application No. 09/434,072
Wireless Telemetry Methods and Systems for Communicating With or Controlling Intelligent Devices
Inventors: Kevin Whitley, Karl Warfel, Arthur Shand
BellSouth Ref: 98018
Our Ref: 36968/176363

Action Requested: Review, and if appropriate, execution of the enclosed formal papers, or in the alternative, a response regarding the non-execution of the formal papers by February 15, 2002.

Dear Mr. Warfel:

We request your further assistance with the prosecution of the above-identified patent application. In sum, we seek your review, and if appropriate, execution of the formal papers associated with this application. We have provided mailing materials for return of the information to us. Details are provided below.

Discussion

The above-identified patent application entered into the national phase of prosecution with the United States Patent and Trademark Office (USPTO) on September 25, 2000. A copy of the application and preliminary amendment is enclosed for your reference. We need your assistance in review and execution, if appropriate, of the formal papers associated with this application.

Combined Declaration for Patent Application and Power of Attorney

To complete the requirements for this application, a *Combined Declaration for Patent Application and Power of Attorney* (DEC/POA) needs to be submitted to the USPTO. The DEC/POA is a document to be executed by the inventors. We have enclosed a DEC/POA for your review, and if appropriate, execution.

The DEC/POA contains several statements to be confirmed by your signature of the document. Among those statements, the DEC/POA includes the following:

- "I believe I am an original, first and joint inventor of the subject matter...."
- "I ... have reviewed and understand the contents of the ... specification [application]...."
- "I acknowledge the duty to disclosure information which is material to the patentability of this application [to the USPTO]...."
- "I ...appoint [certain attorneys of Kilpatrick Stockton LLP] ... to prosecute this application ... [in the USPTO]."
- "I acknowledge the ... attorneys ... [of Kilpatrick Stockton LLP] to represent my employer ...or the entity with which I have contracted...."

By executing the DEC/POA, you are declaring all of the statements in it to be true. If you have any questions regarding the statements in the DEC/POA, you are invited to contact the undersigned, and a response to your question will be obtained from the appropriate source.

Return of the Materials

We would appreciate return of the executed DEC/POA at your early convenience. Please respond by returning the signed DEC/POA to us in the enclosed pre-addressed United States Express Mail envelope by **February 15, 2002.**

Refusal to Sign the DEC/POA

It may be that you refuse to sign the DEC/POA. We would appreciate an indication of such refusal, and if appropriate, an explanation of the refusal. You may provide the

indication and an explanation on the attached form and return them to us in the mailing materials.

Conclusion

Thank you for your assistance in reviewing this letter and the enclosed materials. We hope to receive the executed DEC/POA (or an indication and an explanation of a refusal to make the execution) at your early convenience. If you should have any questions, please do not hesitate to call.

Very truly yours,

Karen Stark

Karen D. Stark, Paralegal

KDS/
Enclosures

cc w/o encls.: John M. Briski, Esq.
Odessa Roberts, Paralegal

Re: United States Patent Application No. 09/434,072
Wireless Telemetry Methods and Systems for Communicating With or Controlling Intelligent Devices
Inventors: Kevin Whitley, Karl Warfel, Arthur Shand
BellSouth Ref: 98018
Our Ref: 36968/176363

☐ The executed DEC/POA are enclosed.

☐ I refuse to sign the DEC/POA.

☐ I refuse to sign the DEC/POA because:

_____
_____
_____
_____

_____ _____
Date Karl Bernard Warfel

FIRST·CLASS FIRST·CLASS FIRST·CLASS FIRST·CLASS

CERTIFIED MAIL

7000 1670 0009 4876 5787

ATLANTA GA 01-28-02

neopos $6.24

FEB 2 0 2002

FIRST CLASS MAIL

K. stark

KILPATRICK STOCKTON LLP

KDS
Suite 2800 1100 Peachtree St.
Atlanta GA 30309

MR. KARL BERNARD WARFEL
12819 SE 38TH ST.
SUITE 261

RETURN TO SENDER AT THIS ADDRESS

NOT DELIVERABLE AS ADDRESSED, UNABLE TO FORWARD

FEB 2 0 2002

KILPATRICK STOCKTON LLP
Attorneys at Law

Suite 2800 1100 Peachtree St.
Atlanta GA 30309-4530
t 404 815 6500 f 404 815 6555
www.KilpatrickStockton.com

(6)

direct dial 404 532 6908
direct fax 404 541 3140
JBriski@KilpatrickStockton.com

April 2, 2002

VIA FEDERAL EXPRESS

Mr. Karl Bernard Warfel
18328 Se Covington
Sawyer Road
Kent, WA 98042-5322

Re: United States Patent Application No. 09/
Wireless Telemetry Methods and Systems for Communicating With or Controlling Intelligent Devices
Inventors: Kevin Whitley, Karl Warfel, Arthur Shand
BellSouth Ref: 98018
Our Ref: 36968/176363
Action Requested: Review, and if appropriate, execution of the enclosed formal papers, or in the alternative, a response regarding the non-execution of the formal papers by April 15, 2002.

Dear Mr. Warfel:

We request your further assistance with the prosecution of the above-identified patent application. In sum, we seek your review, and if appropriate, execution of the formal papers associated with this application. We have also provided a Federal Express prepaid envelope for return of the documents to us. Details are provided below.

Discussion

The above-identified patent application entered into the national phase of prosecution with the United States Patent and Trademark Office (USPTO) on September 25, 2000. A copy of the application and preliminary amendment is enclosed for your reference. We need your assistance in review and execution, if appropriate, of the formal papers associated with this application.

Combined Declaration for Patent Application and Power of Attorney

To complete the requirements for this application, a *Combined Declaration for Patent Application and Power of Attorney* (DEC/POA) needs to be submitted to the USPTO. The DEC/POA is a document to be executed by the inventors. We have enclosed a DEC/POA for your review, and if appropriate, execution.

The DEC/POA contains several statements to be confirmed by your signature of the document. Among those statements, the DEC/POA includes the following:

- "I believe I am an original, first and joint inventor of the subject matter...."
- "I ... have reviewed and understand the contents of the ... specification [application]...."
- "I acknowledge the duty to disclosure information which is material to the patentability of this application [to the USPTO]...."
- "I ...appoint [certain attorneys of Kilpatrick Stockton LLP] ... to prosecute this application ... [in the USPTO]."
- "I acknowledge the ... attorneys ... [of Kilpatrick Stockton LLP] to represent my employer ...or the entity with which I have contracted...."

By executing the DEC/POA, you are declaring all of the statements in it to be true. If you have any questions regarding the statements in the DEC/POA, you are invited to contact the undersigned, and a response to your question will be obtained from the appropriate source.

Return of the Materials

We would appreciate return of the executed DEC/POA at your early convenience. Please respond by returning the signed DEC/POA to us in the enclosed prepaid Federal Express envelope by **April 15, 2002**.

Refusal to Sign the DEC/POA

It may be that you refuse to sign the DEC/POA. We would appreciate an indication of such refusal, and if appropriate, an explanation of the refusal. You may provide the indication and an explanation on the attached form and return them to us in the mailing materials.

Conclusion

Thank you for your assistance in reviewing this letter and the enclosed materials. We hope to receive the executed DEC/POA (or an indication and an explanation of a refusal to make the execution) at your early convenience. If you should have any questions, please do not hesitate to call.

Very truly yours,

John M. Briski

JMB/mg
Enclosures

cc w/o encls.: Karen Stark, Paralegal
Odessa Roberts, Paralegal

Re: United States Patent Application No. 09/434,072
Wireless Telemetry Methods and Systems for Communicating With or Controlling Intelligent Devices
Inventors: Kevin Whitley, Karl Warfel, Arthur Shand
BellSouth Ref: 98018
Our Ref: 36968/176363

☒ The executed DEC/POA are enclosed.

☐ I refuse to sign the DEC/POA.

☐ I refuse to sign the DEC/POA because:

_____
_____
_____
_____

April 14 2002
Date

Karl Bernard Warfel

DECLARATION FOR PATENT APPLICATION

☒ Original ☐ Supplemental ☐ Substitute ☐ PCT

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name.

I believe I am an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

Wireless Telemetry Methods and Systems for Communicating with or Controlling Intelligent Devices
(Title of the Invention)

the specification of which (check one)

☐ is attached hereto

☒ was filed on 3/24/1999 as U. S. Application Serial Number or PCT International Application Number PCT/US99/06429

and was amended by a Preliminary Amendment filed on September 25, 2000 along with transmittal of an application in the United States under 35 U.S.C.371

(if applicable)

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the patentability of this application in accordance with Title 37, Code of Federal Regulations, § 1.56(a).

I hereby claim foreign priority benefits under Title 35, United States Code, § 119 (a) - (d) or § 365(b) of any foreign application(s) for patent or inventor's certificate, or § 365(a) of any PCT international application which designated at least one country other than the United States of America, listed below and have also identified, by checking the box below , any foreign application for patent or inventor's certificate, or of any PCT international application having a filing date before that of the application on which priority is claimed.

Prior Foreign Applications			Priority Claimed		Copy Attached	
Application Number	Country	Foreign Filing Date (MM/DD/YYYY)	YES	NO	YES	NO

I hereby claim the benefit under Title 35, United States Code § 119(e) of any United States provisional application(s) listed below and claim the benefit under Title 35, United States Code, § 120 of any United States application(s), or § 365(c) of any PCT international application(s) designating the United States of America, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT International application(s) in the manner provided by the first paragraph of Title 35, United States Code, § 112, I acknowledge the duty to disclose information which is material to

patentability as defined in Title 37, Code of Federal Regulations, § 1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application:

Parent Application Number	Filing Date	Status (Mark Appropriate Column Below)		
		Patented	Pending	Abandoned
60/079,215	March 24, 1998			X

As a named inventor, I hereby revoke all prior powers and appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith:

FIRM NAME: **KILPATRICK STOCKTON LLP**, 1100 Peachtree Street, Suite 2800, Atlanta, Georgia 30309-4530

Customer No. 30314

Attorney and/or Agent	Registration No.
Roger T. Frost	22,176
Charles Y. Lackey	22,707
Anthony B. Askew	24,154
John M. Harrington	25,592
Donald R. Andersen	28,280
Robert E. Richards	29,105
John S. Pratt	29,476
A. Jose Cortina	29,733
James L. Ewing, IV	30,630
Stephen M. Schaetzel	31,418
James Dean Johnson	31,771
Charles W. Calkins	31,814
Larry A. Roberts	31,871
Jamie L. Greene	32,467
George T. Marcou	33,014
Dean W. Russell	33,452
Richard T. Peterson	35,320
Charles T. Simmons	35,359
Tracy W. Druce	35,493
Eleanor M. Musick	35,623
Nora M. Tocups	35,717
Bruce D. Gray	35,799
Theodore R. Harper	35,890
Geoff L. Sutcliffe	36,348
Pat Winston Kennedy	36,970
David P. Lecroy	37,869
Suzanne Seavello Shope	37,933
Mitchell G. Stockwell	39,389
Jeffery B. Arnold	39,540
Suil Kang	39,723
Mary Anthony Merchant	39,771
Brenda Ozaki Holmes	40,339
Lisa J. Moyles	40,737
Michael J. Turton	40,852

Attorney and/or Agent	Registration No.
Alana G. Kriegsman	41,747
J. Steven Gardner	41,772
Theodore M. Green	41,801
Joni Stutman	42,173
Heather D. Carmichael	42,389
Thomas A. Corrado	42,439
John K. McDonald	42,860
Sima Singadia Kulkarni	43,732
Camilla Camp Williams	43,992
Christopher J. Chan	44,070
Li K. Wang	44,393
John William Ball, Jr.	44,433
Dawn-Marie Bey	44,842
Tiep H. Nguyen	44,465
John M. Briski	44,562
Michael J. Dimino	44,657
Kristin L. Johnson	44,807
Paul E. Knowlton	44,842
J. Jason Link	44,874
Cheryl L. Huseman	45,392
Shelby B. Grier	45,785
Jennifer R. Seng	45,851
Vaibhav P. Kadaba	45,865
Greg Moldafsky	46,514
J. Michael Boggs	46,563
Michael K. Dixon	46,665
Tywanda L. Harris	46,758
Kristin D. Mallatt	46,895
Cynthia B. Rothschild	47,040
John C. Alemanni	47,384
Geoffrey K. Gavin	47,591
Janina Malone	47,768
Robert M. Stevens	47,972
Christopher L. Bernard	P48,234

Attorney and/or Agent	Registration No.
Yoncha L. Kundupoglu	41,130
Scott Zimmerman	41,390

Attorney and/or Agent	Registration No.
Laura M. Kelley	P48,441
Michael A. Bush	P48,893

I acknowledge the above-listed attorneys and agents and their firm Kilpatrick Stockton LLP represent my employer (if I am an employee and this application has been or will be assigned to my employer) or the entity with which I have contracted (if I am an independent contractor and this application has been or will be assigned to such entity) and in such cases do not represent me individually. I further acknowledge I have not established, nor will I seek to establish, any personal attorney/client relationship with Kilpatrick Stockton LLP in connection with this application and understand that, should I require legal representation, I will obtain such, at my expense, other than through Kilpatrick Stockton LLP.

Send Correspondence to: John S. Pratt, Esq.
Kilpatrick Stockton LLP
1100 Peachtree Street, Suite 2800
Atlanta, Georgia 30309-4530

Customer No. 30314

Direct telephone calls to: John M. Briski (404) 532-6908

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Full name of sole or first inventor Kevin T. Whitley

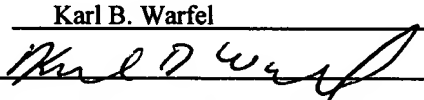
Inventor's signature _____ Date _____

Residence 5030 Oak Hollow Drive, Acworth, GA 30102

Citizenship U.S.A.

Post Office Address Same

Full name of second inventor Karl B. Warfel

Inventor's signature  Date _____

Residence 12819 SE 38th St., Suite 261, Bellevue, WA 98006

Citizenship U.S.A.

Post Office Address Same

Full name of third inventor Arthur M. Shand

Inventor's signature _____ Date _____

Residence 10881 Big Canoe, Big Canoe, GA 30143

Citizenship U.S.A.

Post Office Address Same

****
*** TX REPORT ***
****

(7)

TRANSMISSION OK

TX/RX NO	4346
CONNECTION TEL	##96309#14257483090#
SUBADDRESS	
CONNECTION ID	VOICESTREAM WIRE
ST. TIME	05/02 13:59
USAGE T	00'51
PGS. SENT	4
RESULT	OK

KILPATRICK STOCKTON LLP
Attorneys at Law

Suite 2800 1100 Peachtree St.
Atlanta GA 30309-4530
t 404 815 6500 f 404 815 6555
www.KilpatrickStockton.com

May 2, 2002

direct dial 404 532 6908
direct fax: 404 541 3140
JBriski@KilpatrickStockton.com

FAX

John M. Briski	4	36968/176363
FROM	PAGES (WITH COVER)	CLIENT/MATTER NO.

Karl B. Warfel		425.748.3090
TO	PHONE NO.	FACSIMILE NO.
	Washington, USA	
COMPANY	CITY, STATE, COUNTRY	

PLEASE CALL 404.815.6497 IF YOU HAVE DIFFICULTY WITH THIS TRANSMISSION.

Comments

Please date the document next to your name and return to John Briski via facsimile number 404.541.3140. Thank you.

KILPATRICK STOCKTON LLP
Attorneys at Law

Suite 2800 1100 Peachtree St.
Atlanta GA 30309-4530
t 404 815 6500 f 404 815 6555
www.KilpatrickStockton.com

May 2, 2002

direct dial 404 532 6908
direct fax: 404 541 3140
JBriski@KilpatrickStockton.com

FAX

John M. Briski	4	36968/176363
FROM	PAGES (WITH COVER)	CLIENT/MATTER NO.

CONFIDENTIALITY NOTE:
The information contained in this facsimile message is being transmitted to and is intended for the use of the individual named below. If the reader of this message is not the intended recipient, you are hereby advised that any dissemination, distribution or copy of this facsimile is strictly prohibited. If you have received this facsimile in error, please immediately notify us by telephone and destroy this facsimile message.

Karl B. Warfel		425.748.3090
TO	**PHONE NO.**	**FACSIMILE NO.**

	Washington, USA
COMPANY	**CITY, STATE, COUNTRY**

PLEASE CALL 404.815.6497 IF YOU HAVE DIFFICULTY WITH THIS TRANSMISSION.

Comments

Please date the document next to your name and return to John Briski via facsimile number 404.541.3140. Thank you.

DECLARATION FOR PATENT APPLICATION

☒ Original ☐ Supplemental ☐ Substitute ☐ PCT

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name.

I believe I am an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

Wireless Telemetry Methods and Systems for Communicating with or Controlling Intelligent Devices
(Title of the Invention)

the specification of which (check one)

☐ is attached hereto

☒ was filed on 3/24/1999 as U. S. Application Serial Number or PCT International Application Number PCT/US99/06429

and was amended by a Preliminary Amendment filed on September 25, 2000 along with transmittal of an application in the United States under 35 U.S.C.371

(if applicable)

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the patentability of this application in accordance with Title 37, Code of Federal Regulations, § 1.56(a).

I hereby claim foreign priority benefits under Title 35, United States Code, § 119 (a) - (d) or § 365(b) of any foreign application(s) for patent or inventor's certificate, or § 365(a) of any PCT international application which designated at least one country other than the United States of America, listed below and have also identified, by checking the box below , any foreign application for patent or inventor's certificate, or of any PCT international application having a filing date before that of the application on which priority is claimed.

Prior Foreign Applications			Priority Claimed		Copy Attached	
Application Number	Country	Foreign Filing Date (MM/DD/YYYY)	YES	NO	YES	NO

I hereby claim the benefit under Title 35, United States Code § 119(e) of any United States provisional application(s) listed below and claim the benefit under Title 35, United States Code, § 120 of any United States application(s), or § 365(c) of any PCT international application(s) designating the United States of America, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT International application(s) in the manner provided by the first paragraph of Title 35, United States Code, § 112, I acknowledge the duty to disclose information which is material to

patentability as defined in Title 37, Code of Federal Regulations, § 1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application:

Parent Application Number	Filing Date	Status (Mark Appropriate Column Below)		
		Patented	Pending	Abandoned
60/079,215	March 24, 1998			X

As a named inventor, I hereby revoke all prior powers and appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith:

FIRM NAME: **KILPATRICK STOCKTON LLP,** 1100 Peachtree Street, Suite 2800, Atlanta, Georgia 30309-4530

Customer No. 30314

Attorney and/or Agent	Registration No.
Roger T. Frost	22,176
Charles Y. Lackey	22,707
Anthony B. Askew	24,154
John M. Harrington	25,592
Donald R. Andersen	28,280
Robert E. Richards	29,105
John S. Pratt	29,476
A. Jose Cortina	29,733
James L. Ewing, IV	30,630
Stephen M. Schaetzel	31,418
James Dean Johnson	31,771
Charles W. Calkins	33,014
Larry A. Roberts	31,871
Jamie L. Greene	32,467
George T. Marcou	33,014
Dean W. Russell	33,452
Richard T. Peterson	35,320
Charles T. Simmons	35,359
Tracy W. Druce	35,493
Eleanor M. Musick	35,623
Nora M. Tocups	35,717
Bruce D. Gray	35,799
Theodore R. Harper	35,890
Geoff L. Sutcliffe	36,348
Pat Winston Kennedy	36,970
David P. Lecroy	37,869
Suzanne Seavello Shope	37,933
Mitchell G. Stockwell	39,389
Jeffery B. Arnold	39,540
Suil Kang	39,723
Mary Anthony Merchant	39,771
Brenda Ozaki Holmes	40,339
Lisa J. Moyles	40,737
Michael J. Turton	40,852

Attorney and/or Agent	Registration No.
Alana G. Kriegsman	41,747
J. Steven Gardner	41,772
Theodore M. Green	41,801
Joni Stutman	42,173
Heather D. Carmichael	42,389
Thomas A. Corrado	42,439
John K. McDonald	42,860
Sima Singadia Kulkarni	43,732
Camilla Camp Williams	43,992
Christopher J. Chan	44,070
Li K. Wang	44,393
John William Ball, Jr.	44,433
Dawn-Marie Bey	44,442
Tiep H. Nguyen	44,465
John M. Briski	44,562
Michael J. Dimino	44,807
Kristin L. Johnson	44,807
Paul E. Knowlton	44,842
J. Jason Link	44,874
Cheryl L. Huseman	45,392
Shelby B. Grier	45,785
Jennifer R. Seng	45,851
Vaibhav P. Kadaba	45,865
Greg Moldafsky	46,514
J. Michael Boggs	46,563
Michael K. Dixon	46,665
Tywanda L. Harris	46,758
Kristin D. Mallatt	46,895
Cynthia B. Rothschild	47,040
John C. Alemanni	47,384
Geoffrey K. Gavin	47,591
Janina Malone	47,768
Robert M. Stevens	47,972
Christopher L. Bernard	P48,234

Attorney and/or Agent	Registration No.
Yoncha L. Kundupoglu	41,130
Scott Zimmerman	41,390

Attorney and/or Agent	Registration No.
Laura M. Kelley	P48,441
Michael A. Bush	P48,893

I acknowledge the above-listed attorneys and agents and their firm Kilpatrick Stockton LLP represent my employer (if I am an employee and this application has been or will be assigned to my employer) or the entity with which I have contracted (if I am an independent contractor and this application has been or will be assigned to such entity) and in such cases do not represent me individually. I further acknowledge I have not established, nor will I seek to establish, any personal attorney/client relationship with Kilpatrick Stockton LLP in connection with this application and understand that, should I require legal representation, I will obtain such, at my expense, other than through Kilpatrick Stockton LLP.

Send Correspondence to: John S. Pratt, Esq.
Kilpatrick Stockton LLP
1100 Peachtree Street, Suite 2800
Atlanta, Georgia 30309-4530

Customer No. 30314

Direct telephone calls to: John M. Briski (404) 532-6908

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Full name of sole or first inventor Kevin T. Whitley

Inventor's signature _____ Date _____

Residence 5030 Oak Hollow Drive, Acworth, GA 30102

Citizenship U.S.A.

Post Office Address Same

Full name of second inventor Karl B. Warfel

Inventor's signature _____ Date _____

Residence 12819 SE 38th St., Suite 261, Bellevue, WA 98006

Citizenship U.S.A.

Post Office Address Same

Full name of third inventor Arthur M. Shand

Inventor's signature _____ Date _____

Residence 10881 Big Canoe, Big Canoe, GA 30143

Citizenship U.S.A.

Post Office Address Same

(8)

09/647028

The "Received" stamp of the Patent Office imprinted hereon will acknowledge receipt of:

Applicants:	Kevin T. Whitley *et al.*	
Int'l. Application No.	PCT/US99/06429	Docket No.:
Int'l. Filing Date	24 March 1999	36968/176363

PAPERS SUBMITTED:

1. Transmittal Letter to US Designated/Elected Office (DO/EO/US) Concerning a Filing under 35 USC §371 via Express Mail (Label No. EL602995709US
2. copy of Statement Regarding Lack of Signature of Applicant/Inventor under PCT Rule 4.15(b)
3. Declaration for Utility Patent Application executed by inventor Arthur Shand
4. Recordation Form Cover Sheet and executed Assignment document
3. Check in the amount of $920.00
4. Preliminary Amendment

By: Mitchell G. Stockwell, Reg. No. 39,389
Date: 25 September 2000

532 Rec'd PCT/PTC 25 SEP 2000

176363A

09/647028

The "Received" stamp of the Patent Office imprinted hereon will acknowledge receipt of:

Applicants:	Kevin T. Whitley *et al.*	
Int'l. Application No.	PCT/US99/06429	Docket No.:
Int'l. Filing Date	24 March 1999	36968/176363

PAPERS SUBMITTED:

1. Transmittal Letter to US Designated/Elected Office (DO/EO/US) Concerning a Filing under 35 USC §371 via Express Mail (Label No. EL602995709US
2. copy of Statement Regarding Lack of Signature of Applicant/Inventor under PCT Rule 4.15(b)
3. Declaration for Utility Patent Application executed by inventor Arthur Shand
4. Recordation Form Cover Sheet and executed Assignment document
3. Check in the amount of $920.00
4. Preliminary Amendment

By: Mitchell G. Stockwell, Reg. No. 39,389
Date: 25 September 2000

532 Rec'd PCT/PTC 25 SEP 2000

176363A

COMBINED DECLARATION FOR [redacted]ENT APPLICATION AND POWER OF ATTORNEY
(Includes Reference to PCT Inter[redacted]al Applications)

ATTORNEY'S DOCKET NUMBER
BS100/176363

As a b[redacted] named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

WIRELESS TELEMETRY METHODS AND SYSTEMS FOR COMMUNICATING WITH OR CONTROLLING INTELLIGENT DEVICES

the specification of which (check only one item below):

☐ is attached hereto

☐ was filed as United States Application Serial No. _____
on _____
and was amended on _____ (if applicable).

☒ was filed as PCT International Application Number PCT/US99/_____ on 24 March 1999 (24.03.99) and was amended under PCT Article 19
on _____ (if applicable).

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the examination of this application in accordance with Title 37, Code of Federal Regulations, §1.56(a).

I hereby claim foreign priority benefits under Title 35, United State code, §119 of any foreign application(s) for patent or inventor's certificate or of any PCT international application(s) designating at least one country other than the United States of America listed below and have also identified below any foreign application(s) for patent or inventor's certificate or any PCT international application(s) designating at least one country other than the United States of America filed by me on the same subject matter having a filing date before that of the application(s) of which priority is claimed:

PRIOR FOREIGN/PCT APPLICATION(S) AND ANY PRIORITY CLAIMS UNDER 35 U.S.C. 119:

COUNTRY (of PCT indicate "PCT")	APPLICATION NUMBER	DATE OF FILING (day, month, year)	PRIORITY CLAIMED UNDER 35 USC 119
			☐YES ☐NO
			☐YES ☐NO
			☐YES ☐NO
			☐YES ☐NO
			☐YES ☐NO

COMBINED DECLARATION F[redacted] ATENT APPLICATION AND POWER OF ATTOR[redacted] CONTINUED)
(Includes Reference to PCT Inte[redacted]l Applications)

ATTORNEY DOCKET NUMBER
BS100/176363

I hereby claim the benefit under Title 35, United States Code, §120 of any United States application(s) or PCT international application(s) designating the United States of America that is/are listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in that/those prior application(s) in the manner provided by the first paragraph of Title 35, United States Code, §112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, §1.56(a) which occurred between the filing date of the prior application(s) and the national or PCT international filing date of this application:

PRIOR U.S. APPLICATIONS OR PCT INTERNATIONAL APPLICATIONS DESIGNATING THE U.S. FOR BENEFIT UNDER 35 U.S.C. 120:

U.S. APPLICATIONS		STATUS (Check One)		
U.S. APPLICATION NUMBER	U.S. FILING DATE	PATENTED	PENDING	ABANDONED

PCT APPLICATIONS DESIGNATING THE U.S.					
PCT APPLICATION NO	PCT FILING DATE	U.S. SERIAL NUMBERS ASSIGNED (if any)			

POWER OF ATTORNEY: As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith. *(List name and registration number)*
John S. Pratt 29,476; James L. Ewing, IV 30,630; Charles W. Calkins 31,814; George T. Marcou 33,014; Dean W. Russell 33,452; Richard A. Clegg 33,485; Richard T. Peterson 35,320; Charles T. Simmons 35,359; Nora M. Tocups, 35,717; Bruce D. Gray 35,799; Theodore R. Harper 35,890; Geoff L. Sutcliffe 36,348; Mitchell G. Stockwell 39,389; Marcus Delgado 38,122; Michael J. Turton 40,852; Washington, Edwina T. 43,187; Williams, Camilla C. P43,992

Send Correspondence to: John S. Pratt, Esq.
Kilpatrick STOCKTON LLP
1100 Peachtree Street, Suite 2800
Atlanta, GA 30309-4530

Direct Telephone Calls to:
Mitchell G. Stockwell, Esq.
(404) 815-6214

201	FULL NAME OF INVENTOR	FAMILY NAME: Whitley	FIRST GIVEN NAME: Kevin	SECOND GIVEN NAME: Thomas
	RESIDENCE & CITIZENSHIP	CITY: Acworth	STATE OR FOREIGN COUNTRY: Georgia	COUNTRY OF CITIZENSHIP: U.S.A.
	POST OFFICE ADDRESS	POST OFFICE ADDRESS: 5030 Oak Hollow Drive	CITY: Acworth	STATE & ZIP CODE/COUNTRY: Georgia 30102
202	FULL NAME OF INVENTOR	FAMILY NAME: Warfel	FIRST GIVEN NAME: Karl	SECOND GIVEN NAME: Bernard
	RESIDENCE & CITIZENSHIP	CITY: Greyson	STATE OR FOREIGN COUNTRY: Georgia	COUNTRY OF CITIZENSHIP: U.S.A.
	POST OFFICE ADDRESS	POST OFFICE ADDRESS: 1296 Pinehurst Road	CITY: Greyson	STATE & ZIP CODE/COUNTRY: Georgia 30017
203	FULL NAME OF INVENTOR	FAMILY NAME: Shand	FIRST GIVEN NAME: Arthur	SECOND GIVEN NAME: Mathew
	RESIDENCE & CITIZENSHIP	CITY: Big Canoe	STATE OR FOREIGN COUNTRY: Georgia	COUNTRY OF CITIZENSHIP: U.S.A.
	POST OFFICE ADDRESS	POST OFFICE ADDRESS: 10881 Big Canoe	CITY: Big Canoe	STATE & ZIP CODE COUNTRY: Georgia 30143

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code, and that such willful false statement may jeopardize the validity of the application or any patent issuing thereon.

SIGNATURE OF INVENTOR 201	SIGNATURE OF INVENTOR 202	SIGNATURE OF INVENTOR 203
DATE	DATE	DATE

COMBINED DECLARATION FO[illegible]TENT APPLICATION AND POWER OF ATTO[illegible]ONTINUED)
(Includes Reference to PCT In[illegible]al Applications)

ATTORNEY DOCKET NUMBER
BS100/176363

I hereby cla[illegible]the benefit under Title 35, United States Code, §120 of any United States application(s) or PCT international application(s) designating the United States of America that is/are listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in that/those prior application(s) in the manner provided by the first paragraph of Title 35, United States Code, §112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, §1.56(a) which occurred between the filing date of the prior application(s) and the national or PCT international filing date of this application:

PRIOR U.S. APPLICATIONS OR PCT INTERNATIONAL APPLICATIONS DESIGNATING THE U.S. FOR BENEFIT UNDER 35 U.S.C. 120:

U.S. APPLICATIONS		STATUS (Check One)		
U.S. APPLICATION NUMBER	U.S. FILING DATE	PATENTED	PENDING	ABANDONED

PCT APPLICATIONS DESIGNATING THE U.S.					
PCT APPLICATION NO	PCT FILING DATE	U.S. SERIAL NUMBERS ASSIGNED (if any)			

POWER OF ATTORNEY: As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith. (*List name and registration number*)
John S. Pratt 29,476; James L. Ewing, IV 30,630; Charles W. Calkins 31,814; George T. Marcou 33,014; Dean W. Russell 33,452; Richard A. Clegg 33,485; Richard T. Peterson 35,320; Charles T. Simmons 35,359; Nora M. Tocups, 35,717; Bruce D. Gray 35,799; Theodore R. Harper 35,890; Geoff L. Sutcliffe 36,348; Mitchell G. Stockwell 39,389; Marcus Delgado 38,122; Michael J. Turton 40,852; Washington, Edwina T. 43,187; Williams, Camilla C. P43,992

Send Correspondence to: John S. Pratt, Esq.
Kilpatrick STOCKTON LLP
1100 Peachtree Street, Suite 2800
Atlanta, GA 30309-4530

Direct Telephone Calls to:
Mitchell G. Stockwell, Esq.
(404) 815-6214

2	FULL NAME OF INVENTOR	FAMILY NAME: Whitley	FIRST GIVEN NAME: Kevin	SECOND GIVEN NAME: Thomas
0	RESIDENCE & CITIZENSHIP	CITY: Acworth	STATE OR FOREIGN COUNTRY: Georgia	COUNTRY OF CITIZENSHIP: U.S.A.
1	POST OFFICE ADDRESS	POST OFFICE ADDRESS: 5030 Oak Hollow Drive	CITY: Acworth	STATE & ZIP CODE/COUNTRY: Georgia 30102
2	FULL NAME OF INVENTOR	FAMILY NAME: Warfel	FIRST GIVEN NAME: Karl	SECOND GIVEN NAME: Bernard
0	RESIDENCE & CITIZENSHIP	CITY:	STATE OR FOREIGN COUNTRY:	COUNTRY OF CITIZENSHIP:
2	POST OFFICE ADDRESS	POST OFFICE ADDRESS:	CITY:	STATE & ZIP CODE/COUNTRY:
2	FULL NAME OF INVENTOR	FAMILY NAME: Shand	FIRST GIVEN NAME: Arthur	SECOND GIVEN NAME: Mathew
0	RESIDENCE & CITIZENSHIP	CITY: Big Canoe	STATE OR FOREIGN COUNTRY: Georgia	COUNTRY OF CITIZENSHIP: U.S.A.
3	POST OFFICE ADDRESS	POST OFFICE ADDRESS: 10881 Big Canoe	CITY: Big Canoe	STATE & ZIP CODE/COUNTRY: Georgia 30143

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code, and that such willful false statement may jeopardize the validity of the application or any patent issuing thereon.

SIGNATURE OF INVENTOR 201	SIGNATURE OF INVENTOR 202	SIGNATURE OF INVENTOR 203
DATE	DATE	DATE: MARCH 24, 1999

IN THE U.S. RECEIVING OFFICE OF THE PCT

Applicant: BELLSOUTH INTELLECTUAL PROPERTY CORPORATION

International Application No.: PCT/US99/06429

International Filing Date: 24 March 1999

For: WIRELESS TELEMETRY METHODS AND SYSTEMS FOR COMMUNICATING WITH OR CONTROLLING INTELLIGENT DEVICES

Box PCT
Assistant Commissioner for Patents
Washington, D.C. 20231

STATEMENT REGARDING LACK OF SIGNATURE OF APPLICANT/INVENTOR UNDER PCT RULE 4.15(b)

Sir:

The U.S. Receiving Office is hereby petitioned to accept the above-identified application without the signatures of applicant/inventors Karl Warfel and Kevin Whitley.

These applicant/inventors were one-time employees of a company that is affiliated with the present assignee and signed employment agreements wherein they agreed to execute documents necessary to obtain a patent for any intellectual property anywhere in the world. Although unsuccessful, the employer has made good faith attempts to obtain the executed Powers of Attorney as well as the Combined Declaration and Assignment documents that would be due when the international application is entered into the national phase of prosecution.

Attached for review by the Receiving Office are copies of the following documents:

1. Memorandum to applicant/inventors Karl Warfel and Kevin Whitley forwarding Power of Attorney documents for execution and return via certified mail;
2. Copies of the return receipt for above-identified documents signed by Messrs. Warfel and Whitley;
3. Copies of the employment agreements; and

4. Copies of the executed assignment documents for the priority document.

Respectfully submitted,

Mitchell G. Stockwell
Reg. No. 39,389

Date: July 6th, 1999

KILPATRICK STOCKTON LLP
1100 Peachtree Street, Suite 2800
Atlanta, Georgia 30309-4530
(404) 815-6214

Attorney Docket No. BS100/176363

ASSIGNMENT

WHEREAS, we, **Kevin T. Whitley, Karl B. Warfel, and Arthur M. Shand,** have invented certain improvements in **Wireless Telemetry Methods and Systems for Communicating with or Controlling Intelligent Devices,** for which we have executed an application for United States Patent on _____, 1999, as part of an International Application filed with the U.S. Receiving Office of the PCT on March 24, 1999 claiming priority to U.S. Provisional Patent Application Nos. 60/079,215 which was filed with the U.S. Patent and Trademark Office on March 24, 1998; and

WHEREAS, **BellSouth Intellectual Property Corporation** , a corporation of the State of Delaware, U.S.A., having its principal place of business at 824 Market Street, Suite 510, Wilmington, Delaware 19801, United States of America, desires to purchase same;

NOW, THEREFORE, in consideration of the sum of Five Dollars ($5.00) and other good and valuable consideration paid by BellSouth Intellectual Property Corporation, the receipt and sufficiency of which are hereby acknowledged, we have sold, assigned, transferred and conveyed and by these presents do hereby sell, assign, transfer. and convey unto BellSouth Intellectual Property Corporation, in and for the United States and its territories and for foreign countries, the entire right, title and interest in and to said International Application (including the U.S. part thereof), in and to the invention therein set forth and in and to any patent which may issue on said application or any reissue, renewal, division, or continuation, in whole, or in part thereof, and to said U.S. Provisional Patent Application; and we hereby bind ourselves, our heirs, legal representatives, administrators and assigns properly to execute without further consideration, any and all applications, petitions, oaths and assignments or other papers and instruments which may be necessary in order to carry into full force and effect the sale, assignment, transfer and conveyance hereby made or intended to be made.

IN WITNESS WHEREOF, I have hereunto set my hand and seal this ____ day of _____, 1999.

_____
Kevin T. Whitley

State of Georgia)
County of)ss.

Then personally appeared the above named Kevin T. Whitley who acknowledged the foregoing instrument to be his free act and deed, before me, this ____ day of _____, 1999.

_____
Notary Public

Assignment of Rig[redacted] U.S. National Application under 35 U.S.[redacted] 371
International Application No.
Claiming Priority to U.S. Provisional Application No. 60/079,215

IN WITNESS WHEREOF, I have hereunto set my hand and seal this ____ day of _____, 1999.

_____
Karl B. Warfel

State of _____)
County of _____)ss.

Then personally appeared the above named **Karl B. Warfel** who acknowledged the foregoing instrument to be his free act and deed, before me, this ____ day of _____, 1999.

_____
Notary Public

Assignment of Ri[redacted]o U.S. National Application under 35 U[redacted]. 371
International Application No.
Claiming Priority to U.S. Provisional Application No. 60/079,215

IN WITNESS WHEREOF, I have hereunto set my hand and seal this _____ day of _____, 1999.

_____
Arthur M. Shand

State of _____)
County of _____)ss.

Then personally appeared the above named **Arthur M. Shand** who acknowledged the foregoing instrument to be his free act and deed, before me, this _____ day of _____, 1999.

_____
Notary Public

COMBINED DECLARATION (Includes Reference to PCT Int...)	R PATENT APPLICATION AND POWER OF ATTORNEY ...ional Applications)	ATTORNEY'S DOCKET NUMBER BS100/176363

As [redacted]w named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

WIRELESS TELEMETRY METHODS AND SYSTEMS FOR COMMUNICATING WITH OR CONTROLLING INTELLIGENT DEVICES

the specification of which (check only one item below):

☐ is attached hereto

☐ was filed as United States Application Serial No. _____

on _____

and was amended on _____ (if applicable).

☒ was filed as PCT International Application Number PCT/US99/_____ on 24 March 1999 (24.03.99) and was amended under PCT Article 19

on _____ (if applicable).

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the examination of this application in accordance with Title 37, Code of Federal Regulations, §1.56(a).

I hereby claim foreign priority benefits under Title 35, United State code, §119 of any foreign application(s) for patent or inventor's certificate or of any PCT international application(s) designating at least one country other than the United States of America listed below and have also identified below any foreign application(s) for patent or inventor's certificate or any PCT international application(s) designating at least one country other than the United States of America filed by me on the same subject matter having a filing date before that of the application(s) of which priority is claimed:

PRIOR FOREIGN/PCT APPLICATION(S) AND ANY PRIORITY CLAIMS UNDER 35 U.S.C. 119:

COUNTRY (of PCT indicate "PCT")	APPLICATION NUMBER	DATE OF FILING (day, month, year)	PRIORITY CLAIMED UNDER 35 USC 119
			☐YES ☐NO
			☐YES ☐NO
			☐YES ☐NO
			☐YES ☐NO
			☐YES ☐NO

COMBINED DECLARATION PATENT APPLICATION AND POWER OF ATTORNEY (CONTINUED)
(Includes Reference to PCT International Applications)

ATTORNEY DOCKET NUMBER
BS100/176363

I hereby claim the benefit under Title 35, United States Code, §120 of any United States application(s) or PCT international application(s) designating the United States of America that is/are listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in that/those prior application(s) in the manner provided by the first paragraph of Title 35, United States Code, §112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, §1.56(a) which occurred between the filing date of the prior application(s) and the national or PCT international filing date of this application:

PRIOR U.S. APPLICATIONS OR PCT INTERNATIONAL APPLICATIONS DESIGNATING THE U.S. FOR BENEFIT UNDER 35 U.S.C. 120:

U.S. APPLICATIONS		STATUS (Check One)		
U.S. APPLICATION NUMBER	U.S. FILING DATE	PATENTED	PENDING	ABANDONED

PCT APPLICATIONS DESIGNATING THE U.S.					
PCT APPLICATION NO	PCT FILING DATE	U.S. SERIAL NUMBERS ASSIGNED (if any)			

POWER OF ATTORNEY: As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith. (*List name and registration number*)
John S. Pratt 29,476; James L. Ewing, IV 30,630; Charles W. Calkins 31,814; George T. Marcou 33,014; Dean W. Russell 33,452; Richard A. Clegg 33,485; Richard T. Peterson 35,320; Charles T. Simmons 35,359; Nora M. Tocups, 35,717; Bruce D. Gray 35,799; Theodore R. Harper 35,890; Geoff L. Sutcliffe 36,348; Mitchell G. Stockwell 39,389; Marcus Delgado 38,122; Michael J. Turton 40,852; Washington, Edwina T. 43,187; Williams, Camilla C. P43,992

Send Correspondence to: John S. Pratt, Esq.
Kilpatrick STOCKTON LLP
1100 Peachtree Street, Suite 2800
Atlanta, GA 30309-4530

Direct Telephone Calls to:
Mitchell G. Stockwell, Esq.
(404) 815-6214

		FAMILY NAME	FIRST GIVEN NAME	SECOND GIVEN NAME
2	FULL NAME OF INVENTOR	Whitley	Kevin	Thomas
0	RESIDENCE & CITIZENSHIP	CITY: Acworth	STATE OR FOREIGN COUNTRY: Georgia	COUNTRY OF CITIZENSHIP: U.S.A.
1	POST OFFICE ADDRESS	POST OFFICE ADDRESS: 5030 Oak Hollow Drive	CITY: Acworth	STATE & ZIP CODE/COUNTRY: Georgia 30102
2	FULL NAME OF INVENTOR	Warfel	Karl	Bernard
0	RESIDENCE & CITIZENSHIP	CITY: Greyson	STATE OR FOREIGN COUNTRY: Georgia	COUNTRY OF CITIZENSHIP: U.S.A.
2	POST OFFICE ADDRESS	POST OFFICE ADDRESS: 1296 Pinehurst Road	CITY: Greyson	STATE & ZIP CODE/COUNTRY: Georgia 30017
2	FULL NAME OF INVENTOR	Shand	Arthur	Mathew
0	RESIDENCE & CITIZENSHIP	CITY: Big Canoe	STATE OR FOREIGN COUNTRY: Georgia	COUNTRY OF CITIZENSHIP: U.S.A.
3	POST OFFICE ADDRESS	POST OFFICE ADDRESS: 10881 Big Canoe	CITY: Big Canoe	STATE & ZIP CODE/COUNTRY: Georgia 30143

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code, and that such willful false statement may jeopardize the validity of the application or any patent issuing thereon.

SIGNATURE OF INVENTOR 201	SIGNATURE OF INVENTOR 202	SIGNATURE OF INVENTOR 203
DATE	DATE	DATE

SENDER:
- Complete items 1 and/or 2 for additional services.
- Complete items 3, 4a, and 4b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write *"Return Receipt Requested"* on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):
1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:

Kevin Whitley
5030 Oak Hollow Drive
Acworth, GA 30102

File No. 98018WP

4a. Article Number
p 650 248 592

4b. Service Type
☐ Registered ☒ Certified
☐ Express Mail ☐ Insured
☐ Return Receipt for Merchandise ☐ COD

7. Date of Delivery

5. Received By: *(Print Name)*

8. Addressee's Address *(Only if requested and fee is paid)*

6. Signature: *(Addressee or Agent)*
X

PS Form **3811**, December 1994 102595-97-B-0179 Domestic Return Receipt

Is your RETURN ADDRESS completed on the reverse side?

Thank you for using Return Receipt Service.

APR 15 1999 USPS ATLANTA FL 321

SENDER:
- Complete items 1 and/or 2 for additional services.
- Complete items 3, 4a, and 4b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write *"Return Receipt Requested"* on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):
1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:

Karl Warfel
12819 SE 38th Street
Suite 261
Bellevue, WA 98006

File No. 98018WP

4a. Article Number
p 650 248 591

4b. Service Type
☐ Registered ☒ Certified
☐ Express Mail ☐ Insured
☐ Return Receipt for Merchandise ☐ COD

7. Date of Delivery
6/10/99

5. Received By: *(Print Name)*

8. Addressee's Address *(Only if requested and fee is paid)*

6. Signature: *(Addressee or Agent)*
X

PS Form **3811**, December 1994 102595-97-B-0179 Domestic Return Receipt

Is your RETURN ADDRESS completed on the reverse side?

Thank you for using Return Receipt Service.

BellSouth Perso[illegible] Communications, Inc. Emplo[illegible] Agreement Regarding Intel[illegible]ual Property and Nonsolicita[illegible]n of Employees

CONSIDERATION of my emplo[illegible]ent, continued employment, promotion, or job reassignment, by my EMPLOYER, and other good and valuable consideration:

I hereby assign and agree to assign to my EMPLOYER, or its designee, all my right, title and interest in and to all INTELLECTUAL PROPERTY which during the period of my employment by my EMPLOYER I may DEVELOP either:

1. in the course of such employment, or
2. with the use of time, material, private or proprietary information, or facilities of my EMPLOYER, or any of its AFFILIATED COMPANIES; or
3. relating, at the time I DEVELOP same, to the business or research or development of my EMPLOYER or any of its AFFILIATED COMPANIES.

I will promptly disclose all INTELLECTUAL PROPERTY to my EMPLOYER and, without charge to it but at its expense, will execute a specific assignment of title to my EMPLOYER, or its designee, upon its request and will do anything else reasonably necessary to enable my EMPLOYER, or its designee, to secure a patent, copyright or other form of protection for said INTELLECTUAL PROPERTY anywhere in the world.

I further agree that I will keep in confidence and will not, except as required in the conduct of the business of my EMPLOYER, or as authorized in writing on its behalf, publish, disclose, or use, or authorize anyone else to publish, disclose, or use during the period of my employment, and subsequent thereto, any private or proprietary information when my employment terminates. I will relinquish all documents and records containing such information to my EMPLOYER. I understand that commencing two years after my termination date, my obligation regarding confidentiality will not apply to any information which is not a trade secret under Georgia law.

I further agree that while employed by EMPLOYER, and during the two (2) year period immediately following the termination of my employment for any reason, I will neither directly nor indirectly induce or attempt to induce any employee of EMPLOYER to terminate his or her employment; provided, however, after termination of my employment, I may offer employment either on my behalf or on behalf of any other individual or entity to any employee of EMPLOYER, who, without any inducement by me, has terminated his or her employment with EMPLOYER.

I further agree that the various provisions of the Agreement:

1. shall be interpreted in accordance with Georgia Law,
2. shall be binding upon my heirs, executors, administrators and assigns, and
3. shall be deemed separable from each other, and the invalidity of one provision shall not affect the validity of any other provision.

I further agree that the various provisions of the Agreement shall not be deemed to provide or imply the duration or other terms and conditions of my employment.

I further agree that as used in this Agreement, "EMPLOYER" shall mean BELLSOUTH PERSONAL COMMUNICATIONS, INC which employs me, and any BELLSOUTH COMPANY which may become my employer in the future; "DEVELOP" or "DEVELOPED" shall mean to make, create, develop, write or conceive; and "INTELLECTUAL PROPERTY" shall include inventions, discoveries, ideas, improvements, computer or other apparatus programs and related documentation and other works of authorship, whether or not patentable, copyrightable or susceptible to other forms of protection, whether DEVELOPED during or outside of regular working hours, or solely or jointly with others.

I acknowledge that I have on this day received a copy of this Agreement.

[illegible] Bray
[illegible]ployee Signature

4-15-96
[illegible]te

KARL WARFEL
Employee's Name (*Print or Type*)

201-50-8553
Social Security Number

[illegible]NESSED BY:
[illegible]nature

4/15/96

Telephone Number

Bill Mayberry
Witness's Name (*Print or Type*)

INTELPRO.DOC

EMPLOYEE AG[redacted]EMENT REGARDING INTELLECTUAL [redacted]OPERTY AND PROPRIETARY INFORMATION

IN CONSIDERATION of my [redacted]ployment, continued employment, promotion, or job reassignment, by my EMPLOYER, and other good and valuable consideration:

A. I hereby assign and agree to assign to my EMPLOYER, or its designee, all my right, title, and interest in and to all INTELLECTUAL PROPERTY, which during the period of my employment by my EMPLOYER I may DEVELOP either:

1. in the course of such employment; or
2. with the use of the time, material, private, or proprietary information, or facilities of my EMPLOYER, or any of its AFFILIATED COMPANIES; or
3. relating, at the time I DEVELOP same, to the business, or research, or development of my EMPLOYER, or any of its AFFILIATED COMPANIES.

B. I will promptly disclose all INTELLECTUAL PROPERTY to my EMPLOYER and, without charge to it but at its expense, will execute a specific assignment of title to my EMPLOYER, or its designee, upon its request and will do anything else reasonably necessary to enable my EMPLOYER, or its designee, to secure a patent, copyright, or other form of protection for said INTELLECTUAL PROPERTY anywhere in the world.

C. I further agree that I will keep in confidence and will not, except as required in the conduct of the business of my EMPLOYER, or as authorized in writing on its behalf, publish, disclose, or use, or authorize anyone else to publish, disclose, or use during the period of my employment, and subsequent thereto, any private or proprietary information which I may in any way acquire, learn, develop or create by reason of my employment by my EMPLOYER and that when my employment terminated, I will relinquish all documents and records containing such information to my EMPLOYER.

D. I further agree that the various provisions of this Agreement:

1. shall be interpreted in accordance with Georgia law;
2. shall be binding upon my heirs, executors, administrators and assigns; and
3. shall be deemed separable from each other, and the invalidity of one provision shall not affect the validity of any other provision.

E. I further agree that the various provisions of this Agreement shall not be deemed to provide or imply the duration or other terms and conditions of my employment.

F. I further agree that as used in this Agreement, "EMPLOYER" shall mean the BELLSOUTH COMPANY which employs me; "BELLSOUTH COMPANY" shall mean BellSouth Personal Communications, Inc., or any company owned or controlled, either directly or indirectly; thereby, "AFFILIATED COMPANIES" shall mean any parent or subsidiary of BellSouth Personal Communications, Inc., and any subsidiary owned or controlled, either directly or indirectly, by any of them; "DEVELOP" or "DEVELOPED" shall mean to make, create, develop, write, or conceive; and "INTELLECTUAL PROPERTY" shall include inventions, discoveries, ideas, improvements, computer, or other apparatus programs and related documentation and other works of authorship, whether or not patentable, copyrightable or susceptible to other forms of protection, whether DEVELOPED during or outside of regular working hours, or solely or jointly with others.

G. I hereby acknowledge that I have on this day received a copy of this Agreement.

Kevin Whitley
EMPLOYEE'S SIGNATURE

11/20/95
DATED

J. Beaumont
SUPERVISOR'S SIGNATURE

KEVIN WHITLEY
EMPLOYEE'S NAME (PRINT OR TYPE)

567-35-8474
SOCIAL SECURITY NUMBER

J. L. BEAUMONT
SUPERVISOR'S NAME (PRINT OR TYPE)

ASSIGNMENT

WHEREAS, we, Kevin Thomas Whitley and Karl Bernard Warfel have invented certain improvements in a "WIRELESS TELEMETRY METHODS AND SYSTEMS" for which we have executed an application for United States Letters Patent and

WHEREAS, BellSouth Corporation, a Georgia corporation having an office at 1155 Peachtree Street, N.E., Atlanta, Georgia, 30367-6000, desires to purchase same;

NOW, THEREFORE, in consideration of the sum of Five Dollars ($5.00) and other good and valuable consideration paid by BellSouth Corporation, the receipt and sufficiency of which are hereby acknowledged, we have sold, assigned, transferred and conveyed and by these presents do hereby sell, assign, transfer and convey unto BellSouth Corporation, in and for the United States and its territories and for foreign countries, the entire right, title and interest in and to said application, in and to the invention therein set forth and in and to any patent which may issue on said application or any reissue, renewal, division, or continuation thereof; and we hereby bind ourselves, our heirs, legal representatives, administrators and assigns properly to execute without further

consideration, any and all applications, petitions, oaths and assignments or other papers and instruments which may be necessary in order to carry into full force and effect the

sale, assignment, transfer and conveyance hereby made or intended to be made.

IN WITNESS WHEREOF, I have hereunto set my hand and seal this 16 day of April, 1998.

Kevin Thomas Whitley

STATE OF GEORGIA)
) ss.
COUNTY OF Fulton)

On this 16th day of April, 1998, before me, a notary public, came Kevin Thomas Whitley, to me known and known to be the individual described in and who executed the foregoing assignment, and he duly acknowledged the same to be his free act and deed.

Notary Public

(SEAL)

My Commission expires:

NOTARY PUBLIC, DEKALB COUNTY, GEORGIA
MY COMMISSION EXPIRES FEB. 1, 1999

ATLLIB01 504875 1

IN WITNESS WHEREOF, I have hereunto my hand and seal this 14 day of MAY, 1998.

Karl B. Warfel

Karl Bernard Warfel

STATE OF GEORGIA)
) ss.
COUNTY OF)

On this 14 day of MAY, 1998, before me, a notary public, came Karl Bernard Warfel, to me known and known to be the individual described in and who executed the foregoing assignment, and he duly acknowledged the same to be his free act and deed.

Notary Public

(SEAL)

My Commission expires:

Notary Public, DeKalb County, Georgia
My Commission Expires January 17, 1999